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ABSTRACT

This publication is designed to acquaint reading teachers with various approaches and media in beginning reading instruction. The nine broadly based innovative aspects considered are Using Language Experiences, Individualizing Beginning Reading, Using Color, Applying the Linguistics of Sounds in Words, Using i.t.a. in the United States, Using i.t.a. in Great Britain, Applying Structural Linguistics, Programed Instruction and Automation, and Using Multimedia Techniques. Two major papers and follow-up discussions are included for each topic. Descriptions, personal views, and research findings related to the innovative ideas are presented. (Author)

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A DECADE OF INNOVATIONS:
Approaches to Beginning Reading

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ELAINE C. VILSCEK, *Editor*
The University of Wisconsin

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Foreword

AS YOUR PRESIDENT has viewed the exhibits and attended the sessions of the annual convention of IRA in recent years, she has been impressed with the almost bewildering array of innovational materials and the perplexing differences in the viewpoints of leaders in the field of reading. There are areas of controversy; there are issues; consequently there are questions in our minds. For some questions there are still no definitive answers; but for others there are criteria and guidelines growing out of psychological principles or out of dependable research. Your president—in the belief that IRA should provide a forum for the discussion of controversial topics by bringing in the most knowledgeable, clear-thinking persons available to deal with innovational and controversial materials and practices—designed a program that would include presentation in depth to initial approaches to reading instruction. Specifically she asked the President-elect to set up a three-part program on selected innovations (those that she knew about): a clear-cut presentation of the nature and purposes of each one, a critical review of any research relating to it, and discussion by two competent persons who would be objective and fair in their remarks. President-elect H. Alan Robinson did an outstanding job in finding suitable personnel for these various programs. This bulletin includes the fine papers that were presented late Thursday afternoon when persons interested in the field would be free of conflicting programs. Elaine Vilscek of The University of Wisconsin has ably edited the papers for us.

Classroom teachers and personnel involved in teacher education should find this an exceedingly helpful bulletin.

MILDRED A. DAWSON, *President*
International Reading Association
1966-1967

The International Reading Association attempts, through its publications, to provide a forum for a wide spectrum of opinion on reading. This policy permits divergent viewpoints without assuming the endorsement of the Association.

Introduction

Ensuring a child's success as he begins to learn to read is a common goal, repeatedly expressed. A decade of innovations in beginning reading instruction reflects the quest for means and media that will eliminate the chances of reading failures. Instructional improvements and changes are needed, but reading teachers must avoid accepting the changing instructional modes and media for the sake of change alone.

It has long been recognized that learning to read must be an individual process. Which approach or media or combination of approaches and media will best meet the individual needs of each beginning reader? Which of these instructional modes or media will aid each teacher to reach her greatest teaching capabilities?

This publication is designed to acquaint reading teachers with various approaches and media in beginning reading instruction. The nine broadly-based innovative aspects considered are Using Language Experiences, Individualizing Beginning Reading, Using Color, Applying the Linguistics of Sounds in Words, Using i.t.a. in the United States, Using i.t.a. in Great Britain, Applying Structural Linguistics, Programed Instruction and Automation, and Using Multi-media Techniques. Two major papers and follow-up discussions are included for the topics. Descriptions, personal views, and research findings related to the innovative ideas are presented.

The views of each author and the reactions of the discussants should be carefully and thoughtfully considered by reading teachers. We dare not stake a child's reading success on sensational but unsubstantiated claims. Enthusiasm alone, without objective observation and evaluation, is insufficient. The instructional media or mode, whether innovative or traditional, must demonstrate practicability and must result in added reading success for beginners.

E. C. V.

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USING LANGUAGE EXPERIENCES
IN BEGINNING READING

How a Language-Experience Program Works

ROACH VAN ALLEN
University of Arizona

A LANGUAGE-EXPERIENCE APPROACH to instruction in beginning reading makes no distinction between the development of reading skills and the development of listening, speaking, spelling, and writing skills. All are considered essential in the instructional program and are viewed by teachers as providing reciprocal reinforcement. All facets of language are used as experiences related to the reconstruction of printed materials. All experiences of a child which he can express, especially in oral language, are included as the raw material out of which reading refinement grows. During the instructional program he conceptualizes:

> *What I can think about, I can talk about.*
> *What I can say, I can write (or someone can write for me).*
> *What I can write, I can read.*
> *I can read what others write for me to read.*

A language-experience approach recognizes in daily practice that the oral-language background of each child is a basic ingredient in word recognition. As implemented in most programs

- the thinking of each child is valued, regardless of how limited, which leads to
- encouraging each child to express his thinking in many forms, but especially in oral language, which can be
- represented in written form by a teacher or by the child which can be
- reconstructed (read) by the author and others, which leads to
- reading the written language of others from a variety of sources, which should

- influence the thinking and oral language of the reader so that his spelling, writing, and reading improve.

Each child becomes increasingly sensitive to his environment

The basis of children's oral and written expression is their sensitivity to their environment, especially their language environment, both within the classroom and in the world at large. The continuing responsibility of the teacher is to help children at all levels of ability become increasingly aware of the world in which they live—to "talk" about it in many media and to relate their observations and impressions to their own experiences. They should learn through repeated experiences that our heritage of literature, art, music, and science are the products of men and women who viewed the world with sensitive eyes and ears. For this reason there is a continuing program in a language-experience approach that urges every teacher to

- read something of children's literature each day
- provide a place for children to express their ideas with art media throughout the school day
- discuss topics of interest with children,
- provide a time and place for children to record in writing and in illustrations what they see, hear, taste, smell, feel, imagine, discover
- tell stories from real experiences
- write books which record the real and imaginary experiences of the children in the class

Children succeed through a variety of experiences

Children's communication skills, including word-recognition skills, are promoted through numerous activities, experiences, and devices. A major goal is that of increasing the chances of success for more children, and to do this it is expected that every teacher will know multiple ways of working with individuals. Positive attitudes which result from repeated success are viewed as being as significant as any method or material which might be employed.

The classroom is operated as a language laboratory that extends throughout the day. Language skills are extended and ideas are refined as children listen to stories and recordings, view films and filmstrips, make individual and class books, dictate stories to each other, study words, develop flexibility in using the letters of the alphabet to serve their spelling needs, and begin to record their ideas in writing independently. They view filmstrips and provide the commentary before listening to the accompanying recording. They view motion picture films with the sound track turned off and discuss their own meanings and interpretations prior to hearing the commentary. They build confidence in their own ability to use language at the same time that they are making progress in recognizing the language of other people—people who are not present but whose ideas have been recorded with writing.

Children have frequent opportunities to read their own writing to the entire class, to small groups within the class, and to other groups in the school. The child who is reading his own writing (the meaning of which he already knows) can devote his energies in oral reading to clarity of expression, effectiveness of presentation, interpretation of punctuation, and other necessary details that make listening to oral reading a pleasure.

Motivation for improving language form and usage comes as children's writing is read by others. Pride in "published" work stimulates the young authors to seek language forms that will be understood by others. They are also influenced by what they read and what they hear read to them from hundreds of authors.

As children study the English language—its alphabet, its spelling, its sentence patterns, and the flexibility of meaning in English words—they come to realize that other people use words very much like their own to express ideas. The study of words of high frequency in English to the point of mastering them at sight, correctly spelled, becomes a meaningful experience.

As children express their own ideas, they are interested in finding out, through reading, what other people think and say about topics of interest to them. Wide reading, in turn, stimulates individual authorship, which is handled in the classroom through a variety of publishing procedures.

Understanding the nature and flexibility of the English language to a degree that one can look at printed symbols and reproduce the language of another person is considered to be a lifelong process. Understanding does not always result from "exercises" in reworking other people's language; it is more likely to develop as a child works with and reworks his own language. As he writes to say something important or interesting, he is dealing with the language letter-by-letter, word-by-word, and sentence-by-sentence. It is when he has been helped to improve his own language that he makes significant gains in understanding the strengths and weaknesses of that language. Repeated success in this process of writing and refining language gives the child confidence to view reading materials as another person's language. He can approach the act of reading with an attitude of "being able to reproduce the talk of someone who is not present."

Teachers select activities that extend learning

Through numerous studies, including the San Diego County Reading Study Project (1958-1967), researchers have identified twenty language experiences which contribute to the balanced development of language skills, including reading skills. These twenty language experiences are grouped in three categories as an aid in helping teachers select activities and materials. In well-planned programs some activities are selected from each category each day. During the progress of several weeks, the teacher is careful to choose activities which are related to all twenty experiences.

The three major categories with their emphases are listed below.

Group One. *Extending experiences to include words*—through oral and written sharing of personal experiences, discussing selected topics, listening to and telling stories, writing independently, and making and reading individual books.

Group Two. *Studying the English language*—through developing an understanding of speaking, writing, and reading relationships, expanding vocabularies, improving personal expression, studying words, and gaining some awareness of the nature of the use of high frequency words and sentence patterns.

Group Three. *Relating ideas of authors to personal experiences*—through reading whole stories and books, learning to use a variety of printed resources, summarizing, outlining, reading for specific purposes, and determining the validity and reliability of statements found in print.

Resource books for teachers, which insure that all three categories are dealt with frequently and that all twenty language experiences are extended through the elementary grades, are now available.*

Flexible organization is vital

Learning situations must be designed so that each child can view himself as worthy and able to succeed in reading tasks of increasing difficulty. How a child feels about himself and his relations to others—his family, his teacher, and other members of the class—will determine to a great extent what he is able to say, write, and read.

School practices that make reading achievement the measure of success in the early grades, such as grouping techniques that *highlight* lack of this success, may destroy the child's self-image rather than improve his reading skills. Ability grouping for daily reading instruction can negate any positive attitudes that may be developed in other language experiences. Since every child individualizes his reading whether the teacher wants him to or not, the sensible attitude toward building good learning situations is one that emphasizes each child's success and provides for flexible groupings.

A language-experience approach allows great flexibility in organization and scheduling. The activities are selected to help the teacher use three basic patterns of classroom organization, singly

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*Roach V. Allen and Claryce Allen. *Language Experiences in Reading,* Teacher's Resource Book, Level I, Level II, and Level III. Chicago: Encyclopaedia Britannica Educational Corp.

or in combination, depending upon the nature of the work of the day.

The teacher works with the entire class. This arrangement works well for the following:

- reading aloud to children
- permitting children to read their stories or compositions aloud
- encouraging children to compose stories orally
- directing class discussions on topics of interest
- extending experiences through films, filmstrips, and field trips
- introducing and playing games
- singing and rhythms
- conducting seminars on the development of various skills

The teacher works with small groups—

- completing activities initiated in the large group
- taking dictation from one while others observe
- letting children read their own books as well as those of others
- giving special instruction in skills to some children identified as needing them.
- playing games to practice skills
- practicing effective oral reading
- choosing appropriate books

The teacher serves as a resource person for individual and independent activities—

- suggesting ideas for individual books
- helping with spelling
- furnishing words for independent readers
- helping children choose and organize an independent activity
- conferring about reading and writing progress

Language-experience approaches have advantages

Whether a language-experience approach is used as the major reading program or whether it is used in conjunction with other programs, it has inherent in it certain advantages.

A language-experience approach does not require standard English as a basis for success in the beginning stages. Children who use language greatly divergent from standard English are not placed at a severe disadvantage. Children with great fluency in language do not experience, when they enter school, a period of language regression while they take time to develop a small sight vocabulary and learn a few word-recognition skills.

The approach does not require, nor does it recommend, ability grouping in the class. Teachers can proceed without administering readiness tests or using valuable time to place children in ability groups. This type of grouping serves a questionable purpose in overall language development.

Materials already available can be used effectively. There is no need for large expenditures for special materials for children with reading problems. Basal readers, supplementary readers, recordings, films, filmstrips, trade books, picture sets, children's newspapers, reference materials, and word-study programs can be used to advantage within the basic framework.

Children can begin to read using a sight vocabulary which has been developing in the home and community environment. Brand names, labels, signs, and other words are seen often on television. To this vocabulary can be added words of high frequency which most children do not acquire independently.

The method allows for the effective use of aides to the teacher. Semiprofessionals, older children in the school, interested parents, and other volunteers are examples of teacher aides.

Team teaching arrangements can be used to great advantage. A division of activities into large and small groups can continue through most of the day, thus making maximum use of all team members and their ideas.

The language-experience approach is ungraded in the sense that much of the direct language teaching is done with material produced by the children. Each child produces at a level which he can understand and thus learns to recognize words at his own level. Frustration is avoided. Also, children are helped to choose their own stories and books for independent reading from the beginning. They spend little, if any, time keeping the place while another child reads something which might be too easy or too challenging.

Children learn to spell the words of highest frequency at the same time that they learn to recognize them as sight words.

Phonics is an integral part of the daily program. Children learn about the relationships between sounds they make when they talk and the symbols used to represent the sounds in writing. They view phonics as a natural, normal language experience. The flexibility of sound-symbol relationships in English becomes a challenge in self-expression. Teachers who wish to reinforce and extend phonics learning with a more structured program can do so and still use a language-experience approach.

Children develop a level of independence in making choices in the daily program. This is seldom observed among those who study with highly structured reading programs.

The program requires that all children participate in a variety of expressive activities. What appears to be additional time scheduled for language study includes art, music, dramatization, and rhythmic activities. These are media for the expression of ideas which might later be written and used for reading development.

Children choose writing as an independent recreational activity as often as they choose reading. Self-expression is as important to them as is contact with the ideas and language of other people.

Children who live in a classroom with these major emphases in language development do have an advantage! They develop desire and resources for self expression; they learn how to study the English language as a lifelong pursuit; they are influenced in their own thinking and their own language by the ideas and language of many authors whom they view as friends.

What Research Has Shown About The Language-Experience Program

ELAINE C. VILSCEK
The University of Wisconsin

SEVERAL WEEKS AGO I visited a third grade classroom in which the children learned about communicating by sharing their language experiences. The room was filled with various kinds of evidence that pupils were free to express their feelings and ideas through writing, construction, music, art, and drama. In this learning laboratory youngsters were stimulated naturally to find out about and to practice their language. It was obvious, too, that learning was taking place through skillful management by the teacher rather than incidentally or haphazardly.

These pupils and their teacher are like many participants in research projects under the sponsorship of the U.S. Office of Education, public schools, or private foundations. In the classroom described there were thirty-two youngsters, and their teacher was indeed exceptionally skilled. The potentials and language needs of these pupils from homes on low socioeconomic levels were being recognized. The pupils were reading and comprehending materials that ranged in levels of difficulty from fourth to eighth grade. Their independent writing products reflected skill in the mechanics of writing, skill in originality and fluency of ideas, and an alertness to the world in which they lived. Most gratifying, too, were the obvious poise and eagerness they displayed in expressing themselves through speech.

At the time of my visit the children were collectively contributing to a daily class diary of events. A diary entry was made at the close of each day. But of more significance than the specific entry on April 5 was the following comment by one of the children: "Isn't it amazing that enough happens each day in and out of school to fill our daily diary!"

If we have learned anything from such isolated, limited observations of children learning in an environment of enriched language experiences, it is that children profit from being sensitized to all that is about them. This belief is well expressed in "Renascence" by Edna St. Vincent Millay (7):

The World stands on either side
No wider than the heart is wide.
Above the world is stretched the sky
No higher than the soul is high.

But, generalizing from this single classroom and teacher to all learning situations would be absurd. Mere subjectivity, limited scope in observations, and emotionally toned beliefs are insufficient. As we strive toward a more scientific evaluation of language learning, the educated guess, the reasonable possibility, and the emotional speculation must be investigated. Only through carefully controlled research can we begin to replace our guesses with substantiated facts.

Like the child who expressed amazement about the quantity of happenings in his environment, we can reflect upon the numerous insights gained through scientific studies of the language-experience approaches. The following three questions are, therefore, proposed to educators reviewing available research reports on language-experience approaches:

1. What findings and conclusions have investigators stated in their reports of language-experience studies?
2. What are some reasons for contrasts in the research findings of language-experience studies?
3. How can language-experience approaches be improved through research findings?

Findings and conclusions stated in research reports on language-experience approaches

Often it is said that a significant gap exists between classroom practice and desirable procedures as verified through scientific investigation. Teachers are consistently urged to read professional journals that include findings from research studies and then subsequently make the appropriate classroom applications. Immediately they are confronted by the dilemma of decision when findings and conclusions in research studies are either nebulous or conflicting. Is it any wonder, then, that research and practice are out of pace?

Research findings and conclusions in language experience-approaches typify this dilemma. According to Hildreth (*4*), comparative studies involving experience-related approaches and basal approaches were reported in the literature as early as 1926. The related studies cited by Hildreth include those by A. I. Gates, M. Batchelder, and Jean Betzner (1926); James Tippett and others (1927); Julia E. Dickson and Mary E. McLean (1929); Gertrude Hildreth (1930); J. Murray Lee (1933); Elsworth Collings (1933); Board of Education, New York City (1942); D. E. M. Gardner (1942); J. Wrightstone (1944); Sonja Karsen (1954); and Roach Van Allen and the San Diego Public Schools (1961). As indicated by Hildreth, measured results in these studies reflect some superiority in the achievements of pupils who were taught through experience-oriented instructional methods. In contrast, though, the Gates, Batchelder, and Betzner investigation and the J. Murray Lee study yielded evidence that pupils who learned through basal approaches were superior in achievement.

More recently in studies of language-experience approaches, the findings and conclusions by investigators reflect a multitude of added contrasts and conflicting comments. Investigators in some current language-experience studies include Harris and Serwer (*3*), Hahn (*2*), Kendrick (*5*), Sister Marita (*8*), McCanne (*6*), Stauffer and Hammond (*9*), and Vilscek and Cleland (*10*). These research endeavors were among the twenty-seven U.S. Office of Education First Grade Reading Studies and were selected for examination since some common research controls among the projects were maintained. In each of the seven projects the same instruments were employed in the measurement of selected variables. After 140 days of instruction within methods, pupils were tested in all of the projects.

The following comparisons of findings in the seven studies are charted by methods for test scores on the Stanford Achievement Test, Primary Battery I, Form X, and the San Diego Pupil Inventory of Reading Attitudes. Asterisks on the chart signify differences favoring an instructional approach at either the .05 or .01 level of significance.

COMPARISONS OF STATISTICALLY SIGNIFICANT DIFFERENCES IN PUPIL ACHIEVEMENT WITHIN LANGUAGE-EXPERIENCE APPROACHES AND OTHER INSTRUCTIONAL APPROACHES IN READING

Investigators	Stanford Achievement Test				San Diego
	Word Meaning	Paragraph Meaning	Vocabulary	Word Study	Pupil Attitude
Language-Experience Approaches					
Harris and Serwer					
Hahn	*	*			
Kendrick					
Sister Marita	*			*	
McCanne					
Stauffer and Hammond	*	*			
Vilscek and Cleland	*	*	*	*	*
Other Approaches					
Harris and Serwer	*	*		*	*
Hahn				*	
Kendrick		*			
Sister Marita					
McCanne	*		*	*	*
Stauffer and Hammond					
Vilscek and Cleland					

As the chart is examined, many conflicting findings are obvious. In studies reported by Hahn, Sister Marita, Stauffer and Hammond, and Vilscek and Cleland pupils taught through language-experience approaches scored significantly higher on word meaning than pupils taught through other approaches which were primarily basal oriented. Opposite findings have been presented by Harris and Serwer and by McCanne.

Pupils taught through language-experience methods in studies by Hahn, Stauffer and Hammond, and Vilscek and Cleland achieved significantly higher scores on paragraph meaning than pupils in other approaches. In studies by Harris and Serwer and by Kendrick the reverse is obvious.

Only two of the studies contain evidence of statistically significant differences in vocabulary achievement. McCanne states that pupils in other approaches had significantly higher test scores, while Vilscek and Cleland suggest opposite results.

Contrasts in pupil successes in word study are also apparent. Sister Marita and Vilscek and Cleland found that pupils learning through language-experience approaches were significantly superior. Harris and Serwer, Hahn, and McCanne conclude the reverse.

When the attitudes of pupils toward reading were considered, Vilscek and Cleland found that a language-experience approach is the most desirable instructional method for fostering favorable reading attitudes. Harris and Serwer in addition to McCanne report the desirability of other approaches. Which of these conflicting findings should teachers rely upon?

In attempting to cross-evaluate and control for pupil differences in language-experience approaches, Bond and Dykstra (*1*) extended the data analysis of four of the seven first grade lan-

ACROSS-STUDIES COMPARISONS OF STATISTICALLY SIGNIFICANT DIFFERENCES IN PUPIL ACHIEVEMENT AT .01 OR .05 LEVELS WITHIN LANGUAGE-EXPERIENCE AND BASAL-ORIENTED READING APPROACHES
(Class Mean Analyses and Individual Analyses)

Investigators	Stanford Achievement Tests Word Meaning C	Word Meaning I	Paragraph Meaning C	Paragraph Meaning I	Vocabulary C	Vocabulary I	Word Study C	Word Study I
Language-Experience Approaches								
Hahn		*						
Kendrick								
Stauffer and Hammond	*	*		*				
Vilscek and Cleland	*	*	*	*	*	*	*	*
Basal-Oriented Approaches								
Hahn								
Kendrick			*	*				
Stauffer and Hammond								
Vilscek and Cleland								

Key to Chart: C = Class mean analyses; I = Individual analyses guage-experience studies. The four investigations cross-evaluated were studies by Hahn, Kendrick, Stauffer and Hammond, and Vilscek and Cleland. Across-studies analyses are summarized with asterisks signifying a statistically significant difference favoring an instructional approach.

In cross-study analyses the dilemma of opposite findings is again revealed, though covariance procedures were employed to control initial population differences among the pupils in the four studies. Analyses in which class means as well as analyses in which individual means were considered as the statistical unit are charted. The small number of asterisks reflects the fact that there were no statistically significant differences noted in a number of the project comparisons. Yet, when differences were apparent, the chart shows a predominant distribution of significant effects favoring language-experience instruction. Repeatedly, though, the question of why differences exist in results is posed.

Why research yields conflicting findings

Deciding which conclusions and findings are to be regarded as most reasonably applicable is difficult. In some instances researchers simply fail to provide enough information to enable the reader of the research report to determine reasons for differences in reported results. In other instances the experimenters have violated research techniques that ensure the meaning of findings. But most devastating are the differences among studies that contribute to contrasts in results.

In determining why research in language-experience approaches might yield conflicting findings, the seven first grade language-experience studies will be carefully examined. The following aspects of each investigation will be considered:

1. Selection of schools, teachers, and pupils in experimental or control groups
2. Assignment of schools, teachers, and pupils to experimental or control groups
3. Differentiation of operational guidelines for curricula and proposed practices between experimental and/or control groups within a study and among studies
4. Limitations resulting from Hawthorne and/or placebo effects

5. Information about pupils, teachers, schools, and communities
6. Selection of research designs and procedures in data analysis

The degree to which the findings of the seven first grade language-experience approaches can be generalized will depend upon the differences apparent between projects on each of these listed aspects. Each of the investigators presented some information related to the six aspects. If any consistency can be cited among projects, it is that the studies were generally consistently different in treatment and attention to the six factors listed above.

Selection of schools, teachers, and pupils in experimental and control groups. A wide variation of technique for the selection of teachers and pupils is cited in the seven projects. Hahn, Kendrick, and Vilscek and Cleland indicated that the pupils, as selected, represented three different socioeconomic strata. In the investigation by Harris and Serwer the children selected were Negroes from low socioeconomic levels, while McCanne studied youngsters who came from Spanish-speaking homes.

Two of the studies, those by Harris and Serwer and by Vilscek and Cleland, were located in major urban centers. Studies by Hahn and by Kendrick were conducted within county school structures primarily suburban in school setting. Similarly, Sister Marita's pupil population was selected from suburban school systems. Only one of the studies was described by the investigators, Stauffer and Hammond, as located in a rural setting. A number of the researchers also described different procedures for the random selection of the pupils within the selected school setting.

Teachers, too, were selected in a number of different ways. In some studies teachers were in the project because they taught in the particular school or volunteered; in others, specific criteria of teaching performance and years of experience were the bases for teacher selection. Each of these cited differences in the procedures for selection of schools, teachers, and pupils certainly could have contributed to differences in instructional effects.

Assignment of schools, teachers, and pupils to experimental or control groups. Most of the investigators of the seven first grade projects state that a random assignment of selected schools and pupils to experimental groups and control groups was ensured.

Many differences in the assignment of teachers to groups were evident. For example, Kendrick uniquely described how teachers were assigned in San Diego County. Three hundred and thirteen teachers in San Diego County were asked to respond to the San Diego County "Teacher Inventory of Approaches to the Teaching of Reading." This inventory yielded a score that reflected how favorably a teacher considered the language-experience approach, individualized approach, and traditional method. The consistency between a teacher's response to the inventory and her actual classroom practices was evaluated by the building principal or supervisor. Using a table of random numbers, twenty-seven teachers were thus assigned to each method from those who responded favorably toward the respective method.

McCanne solicited applications from teachers who wished to participate in his study. Thirty-five applications were submitted, and from these thirty teachers were selected according to criteria set by the investigator. The thirty teachers were classified within a number of different geographic areas so that approaches might be distributed throughout the state. The teachers then drew slips of paper for random assignment to experimental groups.

In the study by Hahn local school administrators selected superior teachers who were then invited to select the approach they would use. Similarly, teachers participating in the research project directed by Sister Marita were selected by district supervisors. Teacher assignment to a method generally reflected the prevailing type of reading program offered in the school system or the willingness of the school personnel to change methods.

Stauffer and Hammond imply that teachers were assigned to language-experience groups because they had displayed an earlier competence with the use of this approach. In the research project supervised by Harris and Serwer and by Vilscek and Cleland administrators and supervisors in the public school systems accepted the responsibility of teacher assignment to experimental groups, hopefully at random.

Few would reject the opinion that the teacher and her characteristics affect instructional outcomes. With so many diverse assignment procedures, diversity in findings should be no surprise.

Differentiation of operational guidelines for curricula and proposed practices between experimental and control groups within a study and among studies. Isolating the differences in several proposed curricula and practices is of crucial significance to studies of instructional method. Often, investigators merely apply different labels to methods and practices within a study that are quite similar. The degree and kinds of individualized instruction within an instructional approach are sometimes ignored, too, as well as the amount of time teachers spend teaching reading. The pupils who spend a major portion of their school day learning how to read may have a definite advantage over those who receive less instruction or simply get less individual attention.

In evaluating the results from the seven first grade studies, these factors should receive some attention when pupil achievements between types of approaches are reviewed. An examination of the seven final first grade reports shows that procedures, guidelines, and curricula related to basal-oriented and other approaches were generally uniformly set among projects by the very nature of the published material employed. Most of the investigators referred to use of basic materials in comparisons with language-experience approaches, even though instructional outcomes in some projects were broadly anticipated and generalized to all related language areas.

In contrast, the study by Vilscek and Cleland was designed as a total language-arts study. Interrelated instructional outcomes in the language arts were commonly proposed for all pupils in the project. Only the means and materials employed within an instructional approach differed. The basal approach was conceptualized as a coordinated language-arts method, and the materials for learning in other language areas besides reading were used. This feature was included to ensure balanced language-arts instruction in both instructional approaches.

As the guidelines, curricula, and practices are reviewed among the projects one notes that much variation existed. In all of the seven language-experience classrooms children did learn to read from materials that they had personally dictated orally. Upon this base, different designs were set by the investigators in each of the seven first grade projects. Language-experience approaches were each conceived at some point along the continuum of structured learning and teacher direction to incidental learning and teacher awareness.

Since differences in conceptualizing the approach and in combining the language-experience approach with others will contribute to differences in findings, some contrasts between projects should be noted. For example, Hahn describes the language-experience approach in the Oakland schools as including pupil dictation supplemented by the Murphy-Durrell Speech-to-Print phonics program and the individualized reading of tradebooks. Teachers also used four experimental units prepared by Roach Van Allen. Other units, too, were prepared by teachers in the project as guides to their reading curriculum. Similarly, McCanne describes the use of five units prepared by Dr. Allen as instructional guides, though these were modified to fit the needs of Spanish-speaking children.

Harris and Serwer described two experimental variations of the language-experience approach, one with audiovisual supplementation and the other without audiovisual supplementation. In the language-experience approach without audiovisual supplements, pupil dictation, as a basis for learning in reading, was combined with use of the *Webster Basic Goals in Spelling, Book 1* for phonics instruction and the individualized reading of tradebooks. Specific teacher guidelines between classes within the project were not stated in the final report. The language-experience-audiovisual approach included the use of overhead projectors, tape recorders, earphones, cameras, and phonographs. Suggestions for using these within a language-experience approach were shared through an A-V newsletter prepared by the audiovisual consultant. Teachers also contributed ideas to the newsletter to be shared with their colleagues within the experimental treatment.

In the San Diego County study, Kendrick (5) listed seventeen criteria and rationale for each of the criteria as guidelines to his concept of a language-experience approach. Some recommendations were made for small-group and individual student seminars in direct skill instruction. On the other hand, Sister Marita (*8*) refers to the language-experience approach as a whole-class language-experience organizational pattern. Experience charting was a whole-class activity supplemented by individualized reading of these charts, basal readers, and self-selected tradebooks. Teachers, in fact, set their own class instructional guidelines, prepared their curricula, and proposed practices related to obvious pupil interest, skill mastery, or needs.

Stauffer and Hammond suggested a number of procedures to participating teachers within language-experience approaches and ensured the practice of these procedures through a concentrated weekly in-service supervision program. In addition to group dictation and recording of stories on charts, word attack skills were learned through the use of basal reader materials. Additional application of skills was maintained through individualized reading approaches in tradebooks.

In order to stabilize and qualify the conceptual framework for the language-experience approach in the Vilscek and Cleland study, a developmentally defined language-arts curriculum guide was prepared for teachers employing the approach. The guide contained introductory information for teachers ranging from suggestions for individualizing instruction through whole-class, small-group, or teacher-pupil organizational plans to listings of interrelated instructional outcomes in the language arts for primary pupils. These guides also contained instructional units related to broadly based themes of interests. Each unit included subsections such as specific multileveled activities through which an instructional outcome might evolve naturally or result from directed teaching; suggestions for continued evaluation of pupil progress; annotated listings of available tradebooks; and an appendix of assorted teacher materials. Basically, in this study the language-experience dictation by small groups or individual pupils was supplemented with directed individualized reading of tradebooks.

Even a cursory review of the so labeled "language-experience approaches" reflects differences that were present. How directed and accurate were the instructional prescriptions for pupils among the studies? How much elasticity was provided within each project for meeting pupil needs? What kinds of accommodations were made for pupils' instructional and independent levels of learning to listen, speak, write, and read? How costly were the proposed methods? Did teachers possess the skills for diagnosing each pupil's needs and competencies?

Limitations resulting from the Hawthorne or placebo effects. Investigators should note whether or not experimental techniques for minimizing the Hawthorne effect are present in scientific studies. This effect is the product of the enthusiasm of teachers who are employing a new approach or using new instructional materials. In the seven first grade studies referred to in this paper, various preventive measures were considered or employed. Ways of minimizing the Hawthorne effect within a research project included equalizing in-service training for all participating teachers, employing new instructional materials within each experimental or control treatment, balancing supportive supervisory attitudes, or working with teachers who had previously employed the instructional approaches.

Problems related to the placebo effect are more difficult to control. The placebo effect results merely when teachers and pupils are aware of their participation in a research study. How differently might teachers and pupils respond if they are employing a new method or learning in a class free of research study controls? Such settings are situations to which research findings are typically generalized.

Information about pupils, teachers, schools, and communities. Among the strengths of a coordinated research effort such as the national first grade reading studies was the extensive collection of related pupil, teacher, school, and community information. Findings and conclusions reported in studies are directly related to teacher competencies, school plant and facilities, pupil readiness and other related data, class size and mobility, and cultural influences within the community. Again wide differences in each of these factors were reported within a project or among the seven studies. Educators are advised to carefully note the comparability of these facets to their own school, teacher, and pupil populations in generalizing research findings.

Equally important to the availability of related school, pupil, and teacher data is the information indicating how and by whom the data were gathered, checked, recorded, and purified prior to statistical analysis. The reliability and validity of standardized and informal test measures are also of utmost significance. Care should be taken to minimize the chances of errors in test measurement as well as errors of human or mechanical elements in data collection and processing.

Selection of research designs and procedures in data analysis. A number of the contrasts in research findings can be attributed to differences in research design. Too often, questions are posed to be answered without stated research designs for analysis. Consistently in the first grade language-experience studies, research designs were different and represented a range from simple one-way analyses to complex factorial designs. Procedures for data analysis corresponded, generally, to the research design. In all but one of the seven studies a univariate or multivariate analysis of variance or covariance procedure was employed. Thus, comparability of interpretation was somewhat better ensured in this aspect in the seven studies reviewed.

Recommendations for improving language-experience programs

In this paper, the reader's attention has been directed to differences in the findings of language-experience research, as well as some reasons for the occurrence of conflicting results. The following are a few recommendations of ways in which language-experience programs might be improved through the insights gained by research:

1. Replace emotional responses to the novelty of an approach with continuous objective evaluations of pupils.
2. Consider for which teachers and pupils and in what type of school plant a particular variation of the language-experience approach is most feasible.

3. Ensure operational stability within a flexible language-experience curriculum so that instruction is not left entirely to an accidental, haphazard, or incidental happenstance.
4. Remember that a pupil's learning of mathematics, science concepts, and social studies concepts is essential, too. Balance instructional time.
5. Determine reasonable and appropriate instructional goals for individual pupils in the language arts.
6. Evaluate and establish procedural patterns through which instruction can be most appropriately individualized for the pupils.
7. Maintain a balanced instructional emphasis in language arts areas such as listening, speaking, writing, and reading.

These suggestions can be infinitely extended as changes in our thinking about language-experience programs occur. Hopefully, these changes will be sparks rather than brakes to our progress in helping children to communicate more efficiently.

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Reactions to Using Language-Experience in Beginning Reading

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WHO CAN DENY THE CLAIMS upon which the language-experience approach to reading is based? The philosophy underlying this approach to beginning reading is undoubtedly sound. Universally accepted is the age-old certainty that speech and reading have a binding relationship. One can understand what one reads only when the symbols have meaning—only when one has the experience plus the listening and speaking vocabularies appropriate for the occasion.

An examination of objectives and procedures set forth in the literature, relative to the language-experience approach to reading, provides convincing evidence that certain learning principles have been carefully considered and applied. The following learning principles from a list in the 1955 Yearbook of the Association for Supervision and Curriculum Development—*Guidance in the Classroom* (2)—obviously apply to language experience in reading:

> Learning takes place more readily if the child accepts as useful and important to him the activities in which he is expected to engage.
>
> A child's learning is both richer and easier if he shares in selecting and setting the goals of learning, in planning ways to gain them, and in measuring his own progress toward them.
>
> Learning is more efficient if it has satisfying emotional content—if feeling is supportive of thinking.
>
> First hand experience makes a deeper impression upon a person than vicarious experience.
>
> A child learns best when he is relieved of too great pressure to compete and when he feels reasonably confident that he can accomplish what is expected of him.
>
> A child learns best when his efforts are appreciated by his teacher and his classmates.
>
> Learning is facilitated and reinforced when more than one sensory approach is used.

Thus the merit of the program cannot be questioned with respect to its attempt to follow the best learning procedures. What might be questioned is the teacher's ability to cope with a flexible and unstructured program in implementing these learning principles. For example, is it expecting too much of a beginning teacher, who presumably does not know the skills needed and has not had experience in extending learning without the guidance provided in more structured programs?

The language-experience approach is without doubt one of the most practical pursuits in reading instruction because it attempts what for so long has been recommended—an integrated language—arts program. With the elimination of sharp distinctions in reading, spelling, listening, and writing, goals are not separated. Many have asked why the child should be expected to put back together the fragments of language that should not have been separated in the first place.

Countless studies reveal the important relationships among the language arts. Strickland's study (5) shows that children enter school with language patterns far more sophisticated and interesting than the authors of textbooks wish to admit. Loban's extended research (4) of children's language development reveals the need for more opportunities among young children in primary grades to express their own thoughts in order to develop adequate reading and writing skills. Harry Hahn cites studies by Allen, Aston-Warner, Downing, Mazurkiewicz, and others who have shown that children who develop writing skills early in the reading program become avid independent readers. Hahn's own study (3) points to some advantages in discontinuing the use of readiness workbooks, preprimers, and primers in favor of children's dictated stories and their own writing of experiences. There is sufficient evidence that this approach will develop more meaningful reading vocabularies and extend chlidren's capacities for interpretation.

The stimulation that comes from many language experiences in listening, speaking, reading, and writing is beyond a doubt one of the outstanding features of the program. For example, emphases on word recognition skills are subtly tucked into the dictated stories read and reread. There is little need for drill when children are choosing the words that convey their thoughts, when they are reading and rereading the stories composed in class.

Success is the stimulant that nurtures further growth in word recognition. The child builds a sight vocabulary and learns to use word recognition clues when he is working with his own ideas or those the class has developed. He undoubtedly develops sentence sense as he composes his own sentences. It's a welcome switch from the overemphasis on sounding at the expense of meaning.

In my own research with the language-experience approach to mechanics in writing, I have observed that children make significant gains in language when helped to improve their own expression—their own language. When they rework their material to make it meaningful to others, they are learning about language and how to make it function for them.

Helping the child deal with his own language means that the very shy can experience success, for they are not pressured to go beyond their language pattern and vocabulary. The child with few words to express himself is not penalized or embarrassed. Naturally, the question arises, "Are children with adequate language facilities really challenged in the experience approach?"

We know that vocabularies are extended through experience, that instruction is provided for individual pupils, and that many kinds of language activities are provided. A significant claim is that the child's language ability is extended while his current ability to use language is accepted. The resource book for teachers, *Language Experiences in Reading* by Dr. Allen (*1*), helps teachers identify and develop language skills needed by all pupils throughout the elementary school.

Moreover, other materials and books are not excluded from this program. When children indicate an interest in reading books other than those written by themselves, the books are ready and waiting on the shelves: picture books, science books, beginning reader books, standard literature, and others. Because the children have learned some basic sight words from their own stories, books can be introduced when an interest is expressed.

Also, children are provided with word lists for use in writing their own stories. They thus learn to use new words. As the teacher takes dictation she calls attention to the association of sounds with symbols, formation of letters, and the function of capital letters and punctuation. Many language skills are taught in one single activity or classroom episode. Obviously, grave concern for the more adroit pupils is unwarranted.

Another strong point of this program is the importance attached to developing a positive attitude toward reading. As Dr. Allen points out, "It is far more important to help each child develop a positive attitude toward reading than it is to discover his level of reading ability." This may well determine a child's reading habits in later years. We spend an awful lot of time teaching boys and girls how to read, but too little, I fear, in developing the habits and the desire to read.

When reading is introduced as a natural, functional process of communication, it makes sense to children. It is indeed to them talk written down. The child's own words are used, thus delaying the learning of sound-symbol relationships until he is linguistically and psychologically ready to cope with sound relationships. The child's initial experience is with speech translated into written words, instead of with printed words that must be turned into speech. This should help the child readily develop the following concepts:

Anything said can be written;
Anything written is someone talking:
One doesn't have to be present to say something—it can be written.

Another advantage of the language-experience approach lies in the fact that teachers must accept the current language of the children while helping them improve. They have no other choice than to begin where the child is in language usage and facility.

Dr. Vilscek has given a logical explanation of conflicting findings in research. It might be pointed out, further, that any new experimental approach usually has an advantage over the traditional approach for the following reasons:

Parents are informed about the new approach, bringing needed support before the experience is launched.
Publicity is given to the new experiment.
New materials are provided, an added incentive for teachers involved.

In-service training is provided for teachers in the experimental groups.

It's a safe wager that the outcomes will be favorable. But rarely is so much attention given to the traditional method.

Both papers have stressed the importance of the child's sensitivity to his environment, and have pointed out very forcefully the reciprocal reinforcement of language and the child's general awareness to people and things. Primary teachers can hardly afford to ignore this approach. Regardless of other materials used, there is a place in the program for this approach.

The language-experience approach is reported to be stimulating and challenging to the alert teacher. Perhaps the teacher who is looking for a pattern to follow had best stick to the manual that tells her what to teach and when. The teacher who is unfamiliar with the relationships in language, unfamiliar with concept development, and unfamiliar with ways to assess growth in language might find this approach, in total, beyond her capacity to use. It could be a haphazard and very mediocre way of involving children in reading.

I know the ready response: Such a person shouldn't be teaching. Nevertheless, my question to Dr. Allen and Dr. Vilscek remains, "Are there some teachers who should not even attempt this way of teaching?" Other questions come to mind:

Is a small class load an important factor in the success of this approach to beginning reading?

How do parents accept the program?

When books written by pupils are made available for other members of the class, are they edited in a teacher-pupil conference before they are shared?

What kind of in-service training, if any, is provided for teachers new to this program?

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Recent studies of reading instruction using the language-experience approach seem to have been well planned and administered. Some of the variations followed by the investigators seem to have served to broaden the studies. Work with a variety of socioeconomic levels, however, limits comparisons of results among the studies.

Use of a guide. Vilscek and Cleland reported that their study was designed as a "total language arts program." They provided their teachers with a fairly comprehensive guide including many suggestions for working with the children. They also incorporated "directed individualized reading of tradebooks" in their program. Perhaps the careful guidance of their teachers in the language-experience approach had a strong influence on the results of their study. This approach yielded significantly superior results when compared with the use of a basic developmental program. Little is stated, however, regarding the help teachers were given in use of the basic program. The possible difference in the guidance of the teachers might have been a factor in the superior results achieved in the experimental program.

Supplemental phonics aids. Hahn included the Murphy-Durrell *Speech to Print* phonics program in addition to the language-experience approach with individualized reading of tradebooks in the Oakland County Schools, Michigan. Harris and Serwer used audiovisual materials with part of their language-experience group and supplemented part of the basal reading program with the Phonovisual materials for phonics instruction. Apparently the phonics materials used by Hahn did not function to improve word analysis skills sufficiently in the language-experience approach, since he reported significantly better achievement in word study in the basic developmental program. Harris and Serwer, however, found better word study skills in their basic program, part of which was supplemented by a phonics program. From these results it is very difficult to know to what extent the supplementary phonics programs influenced the findings.

Word meaning. Word meaning was found to be significantly superior in twice as many of the language-experience programs as in the basic developmental programs. Since the children's own language was the basis for their reading in these programs, these findings are expected. Therefore, the use of words by the children in their speech should guarantee that the meanings are known.

Difference in socioeconomic background. The question then arises of why McCanne and Harris and Serwer found better word meaning when the children were taught by the basic approach than by the language-experience approach. McCanne worked with children from Spanish-speaking homes. Harris and Serwer studied Negro children from low socioeconomic levels. The children in the comparable studies were from either rural or suburban areas or were selected from at least three socioeconomic levels.

Acquisition of new vocabulary. Apart from other factors that may be more difficult to identify, more new words may have been presented to the children of low socioeconomic levels in the basic reading program than in the language-experience program. On the other hand, the words acquired from the basic readers may have tended to be those more likely to be used on tests than was the case with the new words acquired through the language-experience approach. The vocabulary acquired by the children in the language-experience program would tend to be much broader than the former and would probably not include many words that would be used in primary tests.

Preschool and kindergarten background. Variety in kindergarten background was mentioned in one of the studies of culturally-deprived children. From the reports of the Head Start programs, the type of kindergarten program which follows these preschool programs, if such were provided, may be important in influencing the progress of the children in school.

In conclusion. Dr. Vilscek has identified many variables among the seven first grade studies that may have resulted in differences in the findings. Several seem to stand out from the others.

A carefully planned guide and help for teachers in the language-experience program seems to be a factor in one investigation. In this program involving children of varied socioeconomic backgrounds, all the significant differences were in favor of the language-experience program.

Observations from two of the studies suggest that special phonics programs that are unrelated to particular reading programs do not always result in better word study skill. Observations from two other studies suggest that children from low socioeconomic levels may acquire a smaller vocabulary or a different type of vocabulary in the experience program than in the basic reading program. The type of vocabulary learned in the experience program may not be accurately measured on a primary test.

Although the use of achievement tests was essential in these studies, such tests have usually been considered inappropriate for first grade children. Their reading vocabulary is difficult to test because of its limited size. The words selected for an achievement test may not be representative of those that are familiar to the children, especially to culturally deprived children. Word analysis is therefore overemphasized. The child who is strong in word analysis skills is usually able to raise his score through this ability. The child with a wide but different ability and good comprehension is handicapped unless the test vocabulary coincides with both his speaking and reading vocabulary.

The suggestions in this paper should under no circumstances be interpreted to indicate that a basic reading program is better than a language-experience approa The long-term gains are the only ones of importance to children.

INDIVIDUALIZING BEGINNING
READING INSTRUCTION

The Individualized Approach to Reading Instruction: Key Concepts

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INDIVIDUALIZED READING is not a system or a method. It is a broad-gauge approach to learning to read and learning with reading, which grew out of teacher dissent expressing concern for the release and development of responsible independence in children and their ability to think for themselves. The individualized approach is based on certain principles of education as guidelines for classroom and schoolwide educational programs in reading and related language arts, social studies, and science. Within these guidelines educators must make decisions regarding a particular reading program's grouping, classroom practices, evaluation procedures, content, books, and materials. The guidelines also imply certain standards for teacher adequacy. Most teachers do not receive adequate preservice training. Consequently, in-service training becomes a necessity.

The second part of this paper summarizes the key principles and guidelines which delimit the individualized approach to reading. The Riverview School Story describes a primary grade reading program which fits within these guidelines.

The Riverview School Story

The Riverview School Story tells how an inner-city school worked within the theoretical guidelines, which we are calling the individualized reading approach, to meet a problem which threatened the school. The story is about a situation which is partly real and partly one that could happen.

Riverview School is a 700-pupil K-6 elementary school located in a steel mill town of 174,000. It used to be in the town's "best" neighborhood, the Upper Maple Street area, in which is located the community's lone cultural landmark, Simmons College, a liberal arts school of 1900 students. But the area has changed. Upper Maple Street is now within the fringe of the town's predominately Negro slum. Now most townspeople would acknowledge that Riverview School is located in the town's "second worst" neighborhood.

What effect did this have on Riverview School? Four years ago, Miss Burns, Riverview's principal, decided she had to make some fundamental changes to adapt Riverview to its new school population and its new neighborhood climate. She saw her school change from one characterized by the children of Simmons College's faculty to a school with about half Negro slum children and half whites. All the whites were from blue-collar steel mill workers' families except for about forty or fifty children of diehard Simmons faculty and similar families who still clung to their big old homes on Upper Maple Street. Riverview School used to have a faculty turnover of about 7 percent each year. But the annual faculty turnover rate began to average over 30 percent, about the same as the town's other two inner-city schools. Teachers knew Riverview as a school with tough children to teach. Miss Burns had remained with her school. She was faced with a wide range of pupil achievement potential, beginning teachers who often could not handle the few openly defiant youngsters in every class, almost daily street fights, and other evidences of the volatile neighborhood tensions.

Riverview's primary grade reading curriculum was essentially the same program the school had followed for the last twenty years. It was a basal reader program with children heterogeneously grouped in self-contained classrooms at each grade level. The poorest readers in grades three through six went to the special reading teacher who worked mornings at Riverview. The reading teacher used small group instruction emphasizing basic skills work, with daily five-minute individual pupil-teacher conferences. He also had the children reading from high-interest low-vocabulary supplementary readers, each at his own rate.

What could be done? After about a year of discussions with key members of her staff, a university consultant, members of the school district central office, and some friends who still lived in the community, Miss Burns began to sense that Riverview's basic problem had three major dimensions that she should consider seriously in her planning. First, Riverview's children needed greater opportunity to move ahead at a pace suited to each child's ability and background, slowly paced for some, while intellectually fast paced for others who had the background and ability. Second, the youngsters needed a school which offered them the kind of stability in school routines which was sorely lacking in the fast changing neighborhood. Third, Riverview's children needed a school which helped each child to feel that his teachers respected him and thought of him as an individual in his own right. According to the school counselor, this last need was particularly pronounced among the half to two-thirds of the children who lived in slum or near slum home conditions.

As Miss Burns reflected on the three dimensions, she felt best about the provisions for stability which she had built into the school's routines and procedures. For example, children followed definite rules about such things as orderly movement in the hall, quiet in the lunchroom, and consideration for speakers at assemblies. But, on the other hand, Miss Burns knew that in some classrooms (notably of the new and inexperienced faculty members) teachers had difficulty keeping a stable, relaxed, but orderly environment.

One first-year teacher told of her disappointment because she found herself always fighting to "keep the lid on tight" so that things would not get out of hand. She told of her resort to much harshness and authoritarianism. This display of insensitivity, she felt, grew at least in part from her inability to understand why particular children in her class behaved as they did. It seemed that the lack of being "tuned in" to the children was a particularly significant problem for many teachers in this school.

As a result of faculty discussions Miss Burns began to develop an idea for a reading program for the primary grades which, hopefully, would encourage teachers to have conferences regularly with individual children and listen to children as a pivotal part of the instructional program. The primary grade reading plan she was formulating would also be an attempt to help each child move ahead more at his own pace. Thus the basic goal of the new primary reading program would be twofold: 1) teaching children to be on their own in reading as soon as possible—in terms of each child's abilities, 2) facilitating pupil-teacher cooperation.

The plan had two phases. Phase I, the development period, extended for three years and included fitting a "Joplin Plan" scheme around the school's primary basal reading program. This meant that teachers would departmentalize at reading time each morning, each of the four teachers at each primary grade level taking one class which was homogeneously grouped to work at a different level and pace. Children who were most able would be in one group using a self-paced, self-selected component in its reading program from the start of the year. Children who were progressing at more of an average rate would be placed into two groups using basal readers and moving toward self-selection and pacing. Finally, those children who needed special literacy or "compensation" teaching would be taught by the grade's best teacher in one small group not to exceed fifteen pupils.

How to organize instruction for the poorest readers was a problem. She realized that the lowest achieving class would be almost all Negro children, but decided to accept this de facto segregation because the low achievers needed a "compensatory education" of the highest sort. Miss Burns agreed with the analysis of Charles Silberman, who in *Crisis in Black and White* (4) called educators to help the Negro child get a good start at all costs:

> It takes no genius for a [Negro] child to know that reading is what school is about in the first few grades. His failure to learn to read, therefore, can only serve to reinforce the negative image he already has of himself because of his color and because of the instability of his background.

During Phase I, the development period, the reading teacher would work with faculty members to help them learn how to build an individualized component into their basal reading program. The reading teacher would be working full-time at Riverview instead of half-time. This would be financed by federal funds. He would work with teachers to develop skill in diagnosing individual reading problems; he would help them practice conducting conferences with children, learning from tape-recorded playbacks and by observing him in demonstration conferences. In addition, he would introduce teachers to the best high-interest low-vocabulary supplementary readers. Books such as the *Boxcar Children* (5)—2.7 level of reading difficulty—would be included in classroom individualized reading libraries, supplying exciting and compelling reading for children just beginning their self-paced and self-selected work. He would also train teachers to guide children in self-selection of reading materials—thus helping youngsters to pick books which they could read comfortably and enjoy, and which, therefore, would offer practice in reinforcing the skills learned in the basal reader component of the program.

Miss Burns would show some of the teachers how experience charts and individual children's dictation could be a central part of the beginning reading program from kindergarten onward (2). The librarian from the nearby public library would be called on to introduce children's favorite books. Miss Burns would introduce teachers to the newly established parent-run school library which was being equipped with federal funds. Parents who were manning the paperback bookstore would be called on to introduce new books at faculty meetings. Also at faculty meetings, key local neighborhood leaders would be asked to speak candidly to the teachers about tenement conditions, structure of street gangs, the school's image, and other realities of life on the slum fringe.

Phase I was scheduled to last for three years. During that time the shift to a much more individualized program was to take place gradually. The fourth year (1967) was to be the first year of Phase II, or the individualized primary grade reading program in final form. To the surprise of all, the plan progressed as scheduled. Most teachers have been trained adequately and the materials and procedures are now organized.

Here is a sketch of Riverview's individualized primary reading program in 1967. In kindergarten the children are involved in a language-experience program with emphasis on extensive chart story work, individual dictation of stories, word games (especially on beginning and ending consonants and other relatively regular phonic elements), and a daily period when children are led to browse (or read, if they can) in picture books of their own selection. During this period the teacher confers with each child, discussing the child's reactions to the pictures and the story lines of his favorite book of the moment, which he brings to the conference.

At the end of the kindergarten year, a list of children who probably are going to have severe difficulty in learning to read is drawn up by the kindergarten teachers with the help of Miss Burns and the reading teacher. These are children who may not seem to have "caught on" to the notion that reading is essentially an alphabetically coded system by which talk is written down; who have serious difficulty with auditory or visual discrimination; who have poor eye-hand coordination; who perhaps score low on the Draw-A-Man test. who are among the lowest scorers on the two reading readiness tests that are administered; and who are observed to be particularly slow at learning. A committee of faculty members is also investigating the de Hirsch series of ten tests (*1*) that appear to have highly significant predictive value in determining which children now in kindergarten will fail to learn to read by the second grade.

The Riverview children, who in kindergarten were thought to be headed for difficulty in learning to read, are grouped in a special first grade class. No more than fifteen children are in this class. The curriculum varies according to the kindergarten and subsequent first grade diagnosis of each child's reading problems. Emphasis here is largely on pre-literacy and literacy training, cutting down the training in mathematics and excluding formal classes in science, social studies, and health. In the literacy class there is no need for formally scheduled conferences between teacher and pupil because much of the work in the class is on a one-to-one basis. The pupils seem to be thriving in the individualized and relaxed activity-centered program. During the year the group of children in the special literacy class changes according to reevaluation of the reading needs of all first grade children.

The other three first grade classes are heterogeneously grouped. In these groups the language-experience emphasis is continued so that learning to read and write is made as natural as possible for each child. The basal reader and a strong spelling-handwriting program are introduced after January 1. During the first few months of first grade, pupils are introduced to beginning word analysis skills. After the first of the year this will be continued in the basal reader and spelling-handwriting components of the reading program. Thus the sequential learning of reading, spelling, and handwriting skills begins about January, but only after those skills are well introduced through language-experience story dictation, in the games, and during stimulating word analysis sessions. Language-experience periods are continued for about thirty to forty minutes daily; children are encouraged to write more on their own and dictate progressively less. As children seem to be able to read on their own they are introduced to books which are displayed around the room. These books are to be read at each child's own pace during the daily book reading time. The kindergarten practice of daily pupil-teacher conferences is continued, with a child usually scheduling himself when he has read or looked at a book he wants to discuss. Teachers confer with each child in the class at least once a week for about five to ten minutes.

In grades two and three the language-experience emphasis on dictation has been phased out for all but the children in the special literacy class. In place of dictation the children are encouraged to write extensively on their own. Along with the writing program, the basal reading program is continued for about thirty minutes daily, with training in reading mechanics and skills being given most attention. A daily forty-five minute self-selection and self-paced reading component is now well under way in the reading program for the three heterogeneously grouped classes. In those self-paced periods, children who need special help with unknown words are grouped around a sixth grader who comes in daily to give them help with words. Pupil-teacher conferences are continued at the same frequency as in the first grade.

For children who have passed the beginning fifth grade level in reading ability, the teacher's emphasis during conferences has shifted to more advanced concerns, such as helping with library research, encouraging critical reading, and extending each youngster's sensitivity and judgment concerning the art and craft of fiction writing. These children particularly are profiting from trips to the town library twice each month. Many of the children's individual study projects were stimulated by the social studies and science curriculum.

But how can Miss Burns keep adequate administrative control with children proceeding at different rates and with some working on different individual study projects? Because of the wider range of reading achievement being stimulated, the school's overall evaluation plan has been changed to a scheme that Miss Burns calls a Continuous Feedback on Individual Development. More extensive-than-usual analysis and evaluation is made of each child's reading strengths and weaknesses along with his developing attitudes toward books and reading. These data are posted in his cumulative file.

Key principles and guidelines

I hope The Riverview School Story has provided a primary grade setting which will amplify and make practical the following outline of key individualized reading principles and guidelines. The additional purpose of the story was to point out that individualized reading is not a doctrine as much as an approach with a wide variety of possible school and classroom applications. The approach can be used successfully in suburban as well as inner-city situations, with graded or nongraded, team taught, or self-contained grouping. Because individualizing means thinking first of the child and his needs and only second of his grade level, the following guidelines will, of necessity, refer to the total range of the elementary school reading curriculum, beginning as well as advanced activities.

One might say (somewhat presumptuously, I'm sure) that there are but two key principles on which rest all the guidelines for individualized reading instruction. These two interdependent principles are: 1) Each child should be helped to be on his own in reading, at the right pace for him and in such a way that he can become a skillful and responsible independent learner and thinker. 2) The teacher and each child should maintain a two-way instructional relationship emphasizing continuous feedback and dialogue. I shall attempt to interpret these two principles with ten guidelines:

1. An overall frame of reference is needed, within which teachers can plan each child's orderly growth toward reading independence. For this we can use the three distinct phases through which most children appear to go as they learn to read independently. These three phases are important to keep in mind when considering the changing role of the teacher, the task of the child, and the content to be learned. First is the Dependent Phase, in which the child is learning the alphabetic-phonetic system, acquiring a basic sight word vocabulary, learning an approach to word analysis, and learning the mechanics of writing and the rudiments of spelling. We can say that this period extends up to about the 2.1 reading ability level. At this point the youngster is able to read a variety of appealing easy-to-read books, for example, *The Cat in the Hat* (3). He is on his own in this limited sense.

The second developmental period is the Early Independent Phase. It stretches from the end of the Dependent Phase (2.1 level) to approximately the 5.1 reading ability level—to the point where the child can read a great many of the books on the children's library shelves. Because the child during the Early Independent Phase is reading from a growing number of titles, the teacher becomes, to an increasing degree, a guide. She encourages the child to proceed at his own pace, helps him in his self-selection and evaluation of books (including fiction, nonfiction, as well as texts), and teaches him needed skills. The Early Independent Phase is the developmental period during which most children need to be given a great deal of practice in reading self-selected books they enjoy and can master comfortably—practice in applying their reading skill more and more automatically.

The last developmental period can be labelled the Independent Phase—from about the 5.1 reading level upward—in which the child is able to read most of the books in the children's library. During this phase the child's task shifts from learning the skills of reading fluency to learning to use and enjoy books that satisfy intellectually and personally. Learning to think reflectively and independently is not easy. It involves learning how to define a question for inquiry, using a library with facility, thinking logically, perceiving accurately, noting dialectics, understanding the abstraction process basic to communication, and organizing and reporting.

2. Especially after the Dependent Phase, each child should be given ample opportunity to select books which he reads for practice to make his skills more automatic. He should be taught to make wise choices and increasingly take responsibility for his own learning.

3. As a general rule, the dependency period (Dependent and Early Independent Phases) should be shortened, thereby extending the period when youngsters are learning independently.

4. Each child should be learning at a pace which best suits his needs.

5. The classroom and the school should be supplied with an ample number of books. Classroom libraries are particularly valuable during the late Dependent through the Early Independent Phases. Classroom libraries should be well stocked with easy-to-read and high-interest low-vocabulary supplementary readers. School libraries need to aim at a minimum of ten books per child. Paperback bookshops should stock about eight hundred selections that are appealing to elementary children. Children should be taken to the local public library at least twice monthly during the Early Independent and Independent Phases.

6. Classroom instructional reading programs should include provision for one-to-one conferences between pupil and teacher.

7. In most cases a sequentially ordered skills teaching program should be built into the instructional reading program.

This might be done in a self-paced fashion such as the SRA kits provide, or it could be an abbreviated basal reader program (as in the Riverview program) with emphasis on teaching the mechanics and skills of reading and far less-than-usual group reading of the same stories. A significant number of the specific reading skills will be acquired as children are involved in language-experience programs from kindergarten onward, as they read self-selected books independently, and as they pursue independent study projects during the Independent Phase. Therefore, the usual sequential skills program can be abbreviated; but most teachers need the assistance and materials provided in a good commercially prepared program. If used judiciously, such a prepared program will free the teacher for one-to-one conferences focusing more on the child's reactions to the ideas in his books and less on the mechanics. Also, with a sequenced skill strand in the reading program, teachers can provide greater structure for some pupils if this seems appropriate.

8. The school and classroom environments should facilitate independent thinking. That is, the environment should stimulate questioning, innovative activities, and inner-directed intellectual behavior. The environment at the beginning of the year should be as free as the previous experience and expectations of the children (and the teacher) will allow.

9. If children are guided to take more responsibility for their own learning, all children will not be following a set curriculum page by page, unit by unit. The school's overall assessment and evaluation plan should be structured to provide a continuous feedback on each child's development, an evaluation that is easily accessible and more detailed and sensitive than usual. The major goals of the school need to be spelled out clearly so that evidence and reports related to goal achievements can be collected. This includes reports on the less tangible aims, such as attitudes toward books and reading, as well as on the more tangible aims of reading education.

10. Of most importance, teachers should be well trained in the following four competencies in order to ensure the strongest implementation of an individualized program.

Teachers must be able to "tune in" and elicit specific feedback from each child. Listening to children is an art and skill in which many teachers appear to be rusty. Teachers need to listen to themselves tape recorded in one-to-one conferences with child after child. Are children asking the kinds of questions in which they are genuinely interested and to which they really do not know all the answers? Are questions often provocative and open ended—why didn't the Incas invent the wheel? To what extent is the teacher *listening* to the child and helping him build and develop his ideas? To what extent is the teacher relaxed enough to let *his* real feelings and reactions to what the youngster is saying come through? To what extent can the teacher understand the child? Has the teacher observed the youngster in his relaxed moments with his peers? Is the child's community, cultural, and home environment so foreign to the teacher's that the teacher is misreading the signals from the child? (How many of his pupils' homes has the teacher visited in the last few years?) All of this implies clearly that there is more to "tuning in" than just talking to a child.

Teachers should be capable of giving clear feedback to each child. How often can we say that a child really understands and is involved in the why's of what he is asked to do at school? How often is he "tuned in" to his teacher's real feelings and perceptions concerning how he is coping at school? Clear feedback given continuously in a non-threatening way is basic to a child's honest self-appraisal. It is necessary if the child is to take increasing responsibility for his own learning. Such a system has a quality different from that of the usual school reporting system that notifies children about mistakes but seldom provides a supportive mirror of academic and personal growth.

Teachers should be able to diagnose reading skill problems and carry out their diagnoses. In an individualized program it is essential that a teacher know how to find a pupil's particular reading strengths and weaknesses and how to communicate them to the child in a supportive way. For example, teachers need to know how to use informal reading inventories as well as how to assess library research and critical reading skills. Teachers also should know which self-teaching materials are appropriate for particular children.

Teachers need to possess a clear understanding of how they might develop independent reflective thinking in children. If we are to realize the potential from individualized reading, teachers must be articulate about the major elements involved in training for reflective thinking. Teachers should know how they might teach children to master these elements. For example, a sixth grade teacher should be able to explain clearly how he might teach children to pursue library inquiry, to ferret out the implicit premises and assumptions in an argument, to perceive and evaluate value statements at various levels of abstraction, to discuss the meaning of a book, and to develop a sensitivity toward fiction.

In conclusion

Building an elementary education to develop independence in thinking is a broad goal toward which the individualized reading program is directed. It has been the intent of this paper to clarify the problem a bit and suggest practical moves for those who are serious about realizing this goal.

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Individualized Reading: Conclusions Based on Research Reports

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WE CAN GO INTO any modern grocery store and obtain homogenized milk, homogenized peanut butter, and other homogenized products. But despite a hundred years of administrative manipulation involving various schemes of grading and sectioning, we will never find homogenized children in homogenized classes in modern schools.

Research has shown conclusively that there is no such thing as a truly homogeneous class (*4*, *5*, *11*, *32*), but many schools still attempt, with little success, to narrow the range of individual differences appreciably by administrative devices such as homogeneous sectioning, Joplin-style interclass deployment, or readiness testing for first grade admission. In New Zealand most schools follow a much more intelligent procedure—they admit each child to the primary school on his fifth birth anniversary (*7*), thereby emphasizing his individuality.

In the United States first grade children are approximately six years old chronologically, but in mental age they are four, five, six, seven, or eight (*13*). To complicate teaching further, each child is an entirely different creation having his own unique pattern of learning capabilities and prior educative experiences on which to base further learning. Therefore it has become evident that individualized instruction *within* the classroom is absolutely essential. Schools provide differentiated work through such procedures as intraclass "power" grouping, flexible skills grouping, independent reading and seatwork, individually prescribed instruction, and individualized reading. The last technique, our topic of concern here, has been described in detail elsewhere (*33*).

Informal experimentation

Individualized instruction has been recommended by school authorities since shortly after graded schools became common in the middle of the nineteenth century, but individualized reading as a specific approach to teaching beginners is a comparatively recent innovation. It was tried out successfully in an orphanage some thirty years ago (*38*), and a public school teacher described "Beginning Reading Without Readers" less than twenty years ago (*30*).

During the last ten or fifteen years there have been several reports of its use in first grade classrooms in which teachers were satisfied with results obtained (*14, 31, 37, 62*). Although not every teacher who has tried it has continued with individualized beginning reading, some have been very enthusiastic (*44, 60*), and one went so far as to conclude that individualized reading is most effective at the first grade level and easier to use than a grouping procedure for large classes (*42*).

Some first grade teachers have tried special adaptations of individualized reading. At least one had children share personal reading in pairs (*43*), and others initiated a practice which has now become very common—combining small group reading with individualized work (*47*). A kindergarten teacher made another type of adaptation of individualized reading by holding a series of individual conferences to promote readiness through discussions on picture interpretation, story sequence, and titles of books children had selected from the room library corner (*29*).

Teachers' published accounts of personal success with individualized reading, however, offer no definite answers to these questions: 1) Would the same teachers be equally successful when employing different approaches to beginning reading instruction? and 2) Would other teachers of beginning reading succeed as well as these teachers if using the individualized approach? Only through controlled experiments is it possible to provide adequate objective information.

Controlled studies

Formal studies of individualized reading as it is practiced at the several elementary and secondary levels have varied greatly in the quality of their design. Looking at the summaries that list such studies, one finds that when the compiler of information has not been particularly concerned with design quality, his research summary tends to show more favorable than unfavorable evidence on the effectiveness of individualized reading (*26, 59, 61*). But recommendations based on summaries in which design and evidence are carefully weighed have been made more cautiously (*36, 40, 50*).

Three extensive formal studies have recently provided data on individualized reading for beginners. Spencer (*55*) devised a special system of individualized reading which included ten days of preliminary instruction on letter names, phonemes, and sight vocabulary; continued intensive instruction in phonetic analysis using *Speech-to-Print Phonics* (*19*); and other meaningful situations "for teaching initial consonants and blends, phonograms, final consonants and blends, vowels and homophones." Vocabulary needed for individual reading was taught through experience stories, picture dictionaries, word books, worksheets, and phonics activities. Each experimental room was given three hundred dollars for new classroom library books, plus several copies of varied basic textbooks and books borrowed from other rooms. Instruction was offered in individual conferences, pupil-team activities, and group sessions.

The control program utilized a well-known basal textbook series and followed the instructional techniques explained in the manual. Children were taught in groups, and pupil-team practice was encouraged.

Twenty-two teachers of above average ability were selected by their administrators for the project. Each decided whether she wanted to teach the experimental or the control program, and they were paired in the same communities. Those in the experimental program attended three weeks of professional meetings in preparation for the new work, while control teachers had two days of in-service meetings to improve their teaching of the basal program.

The outcomes of the Spencer study were inevitable. The additional new books, the special phonics lessons, the volunteering of teachers interested in experimentation, the extensive in-service preparation, and the novelty effect of experimentation were all aligned in support of this unusual individualized program.

Therefore it certainly was no surprise that the experimental classes scored significantly higher than control classes on most of the standard tests that were administered. The study shows that a greatly enriched, partly individualized program taught by well-prepared, better than average, volunteer teachers can be very successful. Unfortunately, it does not answer our question about the comparative success of the same teachers with other programs that are equally favored with special material and opportunities. And it does not tell us whether other teachers can succeed with ordinary individualized reading for beginners.

The second study, reported by MacDonald, Harris, and Mann (*41*), was designed to determine whether the individual conference feature of individualized reading made a significant contribution to first grade achievement when compared with group instruction. Ten experimental and ten control classes were randomly selected from a rural and small town supervisory area. All of the teachers participated in a two-day orientation workshop. Then experimental and control classes utilized the same textbooks, the same workbooks, and the same amount of instructional time. The experimental classes were taught in individual conferences twice a week, while children in control classes were grouped for instruction twice a day. Both types of classes were free to do extension reading as desired. Although three of the experimental group teachers withdrew after the study began, the final sample population included 163 pupils in individualized reading and 210 in group reading.

Achievement tests administered in May revealed no significant differences, except that the control groups which had tested high in reading readiness in the fall had made significantly more progress than the corresponding individualized reading groups. A specially devised attitude picture test indicated that children in experimental classes showed greater preference for reading than the children in control classes. Among the authors' conclusions was the suggestion "that achievement variables affected by programs may well be predominantly related to the materials involved rather than the interpersonal instructional procedures." This possibility has already been noted in connection with Spencer's study, where it is evident that superior achievement may have been the result of many extra materials rather than an individualized class organization.

The third study was first reported by a committee headed by Rodney Johnson (*35*), and later in an abbreviated form by Johnson alone (*34*). Fourteen individualized first grade reading classes were paired in the same communities with fourteen classes receiving basal reading instruction in groups; all classes were heterogeneously sectioned. When the study began, there were no significant differences between the two sample populations in age, class size, length of school year, or IQ (on the SRA Primary Mental Abilities Test). At the end of the first year the individualized classes were slightly less than two raw score points ahead of the basal classes on the Metropolitan Achievement Tests of Word Knowledge, Word Discrimination, and Reading Comprehension, but this difference was statistically significant. By the end of the third grade the differences were still smaller, but still significant. Differences on tests in other subjects were greater than those in reading, suggesting the possibility that the efforts to equate pupil and teacher capability might not have succeeded fully. There were no significant differences between the oral reading competence of individualized and basal classes (*35*).

This study surely proves that teachers can succeed in using the individualized approach, but the slight advantage that the individualized classes showed on some of the tests does not seem to justify our urging all first grade teachers to adopt that approach exclusively.

Related investigations

Several other studies not involving first grade children exclusively may have some bearing on the value of individualized reading for beginners, too. In one of the earlier experiments five primary teachers tried individualized reading with only their most capable groups; although the children in the experiment did somewhat better than others, the degree of superiority was not significant (*9*). In another study (*51*), in which the same teachers used both procedures in a rotation design, second grade children scored slightly better while grouped for basal reading, but the difference was significant at .05 for only word recognition among the slower groups. Teachers in more than one situation have questioned whether young pupils, especially the slower ones, have the capability to work independently for as much time as is required in a fully individualized program (*25, 51*).

Children from disadvantaged homes and others who are highly anxious or compulsive seem to need a considerable amount of structure in their school work. One investigation revealed that deprived youngsters had difficulty in accepting responsibility without considerable external control (*3*), and another showed that they made greater progress in a structured basal reading program than in a language-experience program that progressed into individualized reading (*28*). Results of a third study (*24*) indicated that highly anxious children achieved significantly less academic growth in unstructured, permissive classroom situations than in more formal, structured classrooms. Such findings force one to conclude that an individualized approach may be appropriate for some children, but not for others.

An individualized program requires that teachers have an extremely thorough knowledge of all reading skills so that every skill can be taught when the opportunity arises during individual conferences. However, two investigations revealed that teachers frequently do not utilize such opportunities well (*2, 12*). Perhaps this is explained by eight additional studies which suggest that few teachers are so well versed in skills that they can teach them without assistance from a professional guide. (*1, 10, 18, 20, 23, 46, 52, 54*). In addition, teachers have sometimes pointed out the inefficiency of teaching every child separately when it is possible to teach skills to several who are ready to utilize them at the same time (*51*).

Recommendations

There are numerous questions about the effectiveness of individualized reading that have not yet been answered by research *18, 58*). However, on the basis of information now available several suggestions can be made about the teaching of beginners.

1. The informal reading program can be introduced profita-

bly during the kindergarten year and during the early first grade weeks by the use of stories that children have dictated individually to the teacher. Such experiences help the teacher assess each child's language development. They also give the pupil an opportunity to grow in language skill and to learn some fundamental facts about the reading process while using the vocabulary of his own neighborhood. A system of initial reading instruction that promotes language growth is recommended because studies have shown a high degree of relationship between general language ability and success in reading (*39, 45*).

2. The more formal stage of reading instruction should include individualized reading along with other approaches which may be more suitable for different children at various times. A combination of basal and individualized work has been suggested by a number of writers (*21, 49, 56, 63*). Although such a combination did not produce superior test results in one intermediate school situation, it did motivate a significantly greater amount of reading (*57*). Satisfying results have been obtained by a combination approach in primary classes, too (*48*).

3. Regardless of the instructional approach, the children and teacher should have and use an extensive classroom library containing books for pleasure reading, books for work reading, and materials for skills development. Several fine lists of materials and activities are available (*8, 15, 16, 22, 27, 53*).

4. When using the individualized approach the teacher should refer regularly to one of the helpful lists of skills that have been prepared by Barbe (*6*) or by others.

5. Evaluation of individual growth should be continuous: a child who is not making as much progress as expected in individualized study should be moved without delay into a different type of program.

6. Any teacher who does not feel competent to handle fully individualized reading should be permitted to follow other practices which provide adequately for differentiated work.

Individualized reading has been proven to be a worthwhile innovation. But the skillful teacher, like the skillful doctor who is introduced to a new surgical technique, will carefully consider when its application is appropriate and will recognize his own limitations in its use.

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Reactions to Individualizing Beginning Reading Instruction

Discussant: EDNA M. HORROCKS,
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Dr. Newman includes in his paper a most refreshing and detailed account of a specific individualized primary reading program in current operation in an inner-city school. It is recognized that the account is a description of a situation which is partly real and partly what could happen. The paper also includes an overview of key principles and guidelines for the operation of individualized reading programs in general.

The Riverview School Story. The description of the transition that took place in the neighborhood surrounding Riverview School, a 700-pupil K-6 elementary school, is one that is familiar to all public school educators who work in the large urban areas of our country today. The change from being in the town's best neighborhood to being in one of the worst neighborhoods in the school district is one that is the result of a drastic shift in population with its subsequent effect on the housing patterns of that area. The teacher turnover in schools located in "undesirable" neighborhoods is also a very familiar one to school personnel who are working in large cities.

It was encouraging to note that a drastic change in the approach to reading in the Riverview schools was not made hastily, but only after a year's deliberation and many discussions with key personnel in the area. The three major dimensions that were considered in structuring a revised plan of reading for Riverview pupils were sound ones from the viewpoint of *a*) the consideration of individual pupil capacity, *b*) the maintenance of stability in the normal school procedures, and *c*) attention to the human relations aspect as it related to each child in the revised program.

It was also heartening to note that the Riverview plan was set up with a transition period of three years for Phase I, the development period. Too many times in this day of the federal subsidy it is expected that "innovative" reading programs must go into effect in full bloom overnight.

The Joplin scheme of grouping was used in Riverview. The pupils at each grade level were divided into four groups. This meant that teachers would departmentalize at reading time each morning—each of the four teachers at each primary grade level taking one class which was homogeneously grouped to work at a different level and pace. One might have questioned the advisability of this procedure for first grade children. Most school personnel feel that, if there is one place in the graded pattern of elementary schools where children should remain in a self-contained classroom, it is in the first grade. Opportunities for reinforcing reading skills permeate the entire school day, and the skillful classroom teacher capitalizes on these opportunities to capture pupil interest and to make reading functional. However, the decision in Riverview, to have the best teacher taking the group needing most help and also to keep the size of that slowest group to fifteen pupils, was commendable.

Factors that seemed to aid Riverview classroom teachers and children in the development period of Phase I were—

1. The assistance of a special reading teacher
2. The development of teacher skill in diagnosing reading problems of individual children
3. Tape-recorded playbacks of the reading teacher's conferences with individual children so that classroom teachers could listen and learn techniques
4. Introduction of high-interest, low-vocabulary trade books
5. Training of teachers in their ability to guide children's self-selection of reading materials that could be read and enjoyed and that would also ensure practice in reinforcing skills learned in the basal reading program
6. Continued use of experience charts
7. Availability of books in libraries and paperback bookstores

Highlights of Phase II of the individualized reading program in Riverview as it existed in 1967 are—

1. The program for kindergarten children involved experience charts, word games with phonics, browsing (or reading) in picture books, and teacher conferences.
2. A "special" first grade class was formed of fifteen pupils who seemed to be headed for difficulty in learning to read. (This revision took care of a concern, previously expressed, about the first grade children who were departmentalized for reading during the three-year transition period.)
3. The other three first grade classes were heterogeneously grouped with language experience and beginning word analysis for half the term; the basal reader and spelling-handwriting components of the reading program were introduced after the first of January.
4. Grades three and four contained pupils grouped heterogeneously. Pupils worked in both a basal reading program and a daily self-selected, self-paced reading plan.
5. Children who had passed the fifth grade reading level carried on more library research and critical reading.

Some reference was made to the use of standardized tests to analyze pupil progress in reading. It is hoped that test analysis will continue extensively during the next three years of the project in order to provide an evaluation of this intensive and "structured" approach to individualized reading.

Key Principles and Guidelines. In the second part of the paper the author discusses two major principles.

1. Each child should be helped to be on his own in reading, at the right pace for him and in such a way that he can become a skillful and responsible, independent learner and thinker. Teachers would need to understand that the word "helped" would imply that there would need to be some direct suggestions from the teacher, as well as some subtle guidance to the child that would lead him toward independence. Also, the phrase "at the right pace for him" probably indicates that the teacher needs to ascertain how fast a child may move along and how many times a day or a week there needs to be direct help for each particular child.

2. "The teacher and each child must maintain a two-way instructional relationship emphasizing continuous feedback and dialogue." The phrase "instructional relationship" implies that there needs to be both teaching and learning on the part of both teacher and pupil.

The paper indicates that there are three distinct phases through which most children appear to go as they learn to read independently; namely, 1) the Dependent Phase, which extends from the point of school entry to 2.1 reading level, 2) the Early Independent Phase, which extends from 2.1 to 5.1 reading ability level, and 3) the Independent Phase from 5.1 reading level on upward. A full description of each phase is included in the paper.

A statement is made that "As a general rule, the dependency period (Dependent and the Early Independent Phases), should be shortened, thereby, extending the period when youngsters are learning independently." However, these first two phases cover that very important span that extends from the time that the child enters school to the time when he can achieve a 5.1 reading ability level. One might question the advisability of undue effort to shorten the first phase, the Dependent Phase particularly, since this is the phase in which the child must learn the alphabetic-phonetic system, acquire a sight vocabulary, learn the approach to word analysis, along with the mechanics of writing and the rudiments of spelling. Unless the child secures a really good foundation in these skills and abilities, he may go from one frustration level to another in his attempts to achieve independence in reading.

In the tenth and last guideline of the Key Principles section the statement is made that "teachers should be well trained in . . . four competencies . . . to ensure the strongest implementation of an individualized program." The competencies listed are the following:

> Teachers must be able to tune in and elicit specific feedback from each child.
>
> Teachers should be capable of giving clear feedback to each child.
>
> Teachers should be able to diagnose reading skill problems and carry out their diagnoses.
>
> Teachers need to possess a clear understanding of how they might develop independent, reflective thinking in children.

With these four competencies in mind, let us refer back to the introductory material of this paper, which includes the following two statements:

> 1. Within these guidelines [for the individualized approach] educators must make decisions regarding a particular reading program's grouping, classroom practices, evaluation procedures, content, books, and materials.
> 2. The guidelines also imply certain standards for teacher adequacy. Most teachers do not receive adequate preservice training. Consequently, in-service training becomes a necessity.

A burning question in the minds of most public school administrators is simply, "Why aren't students who are preparing for teaching in the elementary schools given practical training in the teaching of reading before they graduate from the universities?" The mushroom growth of in-service courses conducted by over-burdened public school personnel is a direct result of the inadequate preparation of most new teachers for the realities of classroom teaching, whether it be a program of basal readers, an individualized reading program, or a combination of both.

In conclusion, it should be recognized that this account of the change and progress of pupils and teachers in the Riverview story, plus the definite suggestions for "action procedure" included in the Key Principles and Guidelines, combine to make this paper one that will be read, and reread, with interest and profit by both teachers and administrators. The paper provides many specific procedures and goals for those educators who might like to launch a similar experimental reading program in their own school systems.

Discussant: ROBERT A. MCCRACKEN,

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Individualized reading is a method. Individualized reading may be so flexible that it appears not to be a method, but it has as many distinctive features as other methods. It lacks the *package;* trade books replace the text series or the packaged program. We do not have individualized reading when we use the basal reader in the morning and book reading in the afternoon, even if we add conferences to the afternoon. I do not agree with the logic that if research shows two methods to be equally effective that by using the best of both we get a better method. This combination of basal and individualized reading is at best a teenage marriage. Its chances of happiness are slim. Why the combination?

1. We are in a hurry to produce young word callers.
2. As supervisors of teachers we are as afraid to allow teachers to learn as teachers are afraid to allow children to learn.
3. We are obsessed by sequential skill development.
4. We are obsessed by high-interest low-vocabulary materials.

Americans are obsessed with speed. Chronically we hurry. We want very young children to appear to be reading, and we want it as quickly as possible. That Sipay's (2) prenatal fetoscope phonics can be taken seriously by teachers evidences our hysteria.

I have seen readers at ages two, three, and four who couldn't call a single word. They loved books and *read* books for long periods at one sitting. They loved to have books read to them. They had two or three years of reading experience before they were expected to learn *word calling*. Real readers use books. These very young children were real readers.

Most readers can say words, but reading is more than ability to say words, and beginning reading must be more than learning to say words. Some systems of teaching reading are so concerned with word calling that they seem not to care if a child reads. As taught, children perceive that good word calling is good reading.

Pupils taught by systems of beginning reading instruction which emphasize word recognition should score well on standardized reading tests at the end of the first grade; they probably should score better than those pupils taught under systems which do not emphasize word recognition. Systems stressing word calling will impress parents. The efficacy of an early beginning is probably not a question to be answered by experimental research comparing methods of first grade instruction.

We have come a long way since realizing that good eye movements were a result of good reading habits rather than a cause. We may need to examine whether good word calling is the result of good reading habits rather than the cause. I suggest that good word recognition is a concomitant or a result of good reading habits. And furthermore, I suggest that in our rush to teach children early, word calling has become the goal.

If children are to grow into reading, the natural process extends for years. We are in an era of artificially aged cheese and beer. Teenagers dye their hair gray. Children get a facade of sophistication from TV, and we age them further by pushing for early artificial achievement in reading. Artificially aged cheese and beer may be good or even better than the real product, but our artificially aged reader is not. We must allow time for children to learn to use books, to live with books before we press the formal reading program. We may need three years of informal work rather than three months of readiness following Head Start and kindergarten. We must accept and work in the dependency stage, not try to shorten it.

As trainers and supervisors of teachers we are equally obsessed with speed in developing teachers. My colleagues strive in our undergraduate program to produce a finished product as our beginning teacher. Any weakness observed in first-year teachers results in a call for another education course for undergraduates.

Learning to teach reading under any system requires time and experience. To learn to teach individualized reading probably requires more time than learning to teach following a syllabus or teacher's manual. We push teachers to follow syllabi because this gives teachers the appearance of teaching well sooner. As our excuse we say we are concerned with the children. If we as supervisors are concerned with children, we have to be as concerned about each teacher as we want each teacher to be concerned about each child. The more guides we produce for *all* teachers, the more manuals we prescribe for *all* teachers, the less likely we are to reach that goal.

To combine individualized reading with other systems because teachers are not capable of teaching individualized reading is not an acceptable excuse. We give intensive training for our other methods; we must give extensive training—two, three, or four years, not a summer workshop—for individualized reading. We should consider the possibility that workshops for teachers before an experiment begins only give equal time to the control and experimental teachers. Short instructional sessions prepare teachers neither adequately nor equally. We need longitudinal studies in which all teachers, experimental and control, study together regularly with supervision over periods of three or more years as they develop competency in their assigned methods. Too much experimental weight is given to experiments in which the real variable, the teacher, is overlooked. We use pupils as our population, our N, when we should be using teachers as our population.

We are worried about sequential skill development, so we prescribe individualized reading plus a basal reader skill program. We presume that there is *a* skill sequence, even though the basals do not agree nor do the nonbasal programs. Many skill programs are shotgun approaches; everything is included lest something be missed. It is the multi-vitamin pill added to the adequate natural diet. It does not harm, so it must be good. The shotgun approach is harmful for two reasons: 1) It wastes time for each child who doesn't need it. 2) It gives the teacher a false sense of having done her job. The teacher's job is to sensitively diagnose each child regularly, and mutually to prescribe work. This mutual prescription is the major function of the individual conference; combination programs vitiate this function.

We are obsessed with high-interest low-vocabulary reading materials, again equating reading with word recognition in its sterile sense. What we need are good stories, high-interest stories with exciting language and exciting words, stories which can be read and reread, drilled if you wish, because they are so good. Our able readers reread stories hundreds of times. We seem afraid to allow our poor readers this privilege.

Let me use just one example, a book we have used in kindergarten, first grade, second grade, and with very poor readers in junior high and high school. We have used it this year and in previous years. Repetition hasn't dulled it. We use the Weston Woods (3) film version to introduce this book. We show the film five or more times. We use the sound filmstrip for reinforcement. The pupil may run this twenty to fifty times. We use the book as a culminating luxury to teach word recognition. We have no problems with the difficult vocabulary because the difficult vocabulary is well known by the time we get to the word calling. I refer to *The Five Chinese Brothers* (*1*). Note the difficult words introduced in the first seven pages, pages delightfully illustrated.

> Once upon a time there were Five Chinese Brothers and they all looked exactly alike.
>
> They lived with their mother in a little house not far from the sea.
>
> The First Chinese Brother could swallow the sea.
>
> The Second Chinese Brother had an iron neck.
>
> The Third Chinese Brother could stretch and stretch and stretch his legs.
>
> The Fourth Chinese Brother could not be burned.
>
> And
>
> The Fifth Chinese Brother could hold his breath indefinitely.
>
> Every morning the First Chinese Brother would go fishing, and whatever the weather he would come back to the village with beautiful

> and rare fish which he had caught and could sell at the market for a very good price.
>
> One day, as he was leaving the market place, a little boy stopped him and asked him if he could go fishing with him.
>
> "No, it could not be done," said the First Chinese Brother.
>
> But the little boy begged and begged and finally the First Chinese Brother consented. "Under one condition," said he, "and that is that you shall obey me promptly."
>
> "Yes, yes," the little boy promised.

Exactly, indefinitely, consented, promptly. We can think of synonyms, but why bother. The brothers are *exactly alike.* The child who doesn't have this vocabulary needs to learn it, although this is probably just what the child will say in looking at the illustration of the five brothers. What joy to learn a word like *indefinitely,* and how easy. What word could you ever think of to substitute for it, particularly starting with *in.* *Consented* is so much better than *agreed* or *let him,* and probably no harder to learn in this context. *Promptly* has that wonderful sound which implies *now, right away.* We do not have to maintain these words. We can note the affixes, the syllables, the vowels, the consonants. We can use these words, just as we can use any words, to learn about words. Since this is so, we might as well use interesting words rather than easy words. Easy words have never been easy for very poor readers; perhaps because easy words are not interesting.

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Studies in the Use of Color

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WORDS IN COLOR, the commercial name for the Morphologico-Algebraic Approach To Teaching Reading developed by Caleb Gattegno, not only "organizes the sounds of the English language into columns by sound and color," but also "makes possible the awareness and acceptance of cultural and regional pronunciation" (3). In the process of visual dictation (i.e., the insertion of timing in the ordered pointing to the letter signs) the appropriate color sign is used, permitting the desired dialect while adhering to the correct spelling.

The students write from oral dictation or visual dictation. The temporal order of speech, put in motion through visual dictation, facilitates the student's journey from the three-dimensional world in which he lives to the two-dimensional book print he must read. The visual dictation also accentuates the importance of order in the formation of words from signs or letters. Sequential programing from the simple to the complex is observed in the Word in Color material.

Pupils speak as a result of observing the pointer or they utilize the pointer for other students' responses. Awareness of language structure and syntax results from the color coding of the function words. This is a process separate and different from the color coding of the charts.

The format and color of the charts operate to simplify decoding by separating the figure from the ground, the teaching-learning situation from the classroom environment, while the stimulation of the color rivets attention and induces attending. The synthetic and the analytic are both presented with motorvisual equivalence and auditory training that is incorporated into a harmoniously knit heuristic garment.

Further, Words in Color, within the framework of its organization and materials, operates within a well developed, well organized body of learning theory which gives this approach its unusual strength and power. Learning, a function of the learner, is developed inductively. The teacher is a catalytic agent who subordinates teaching to learning by allowing the student to make his own connections through his responses to carefully developed questions. The student is responsible for making value judgments on his own and his classmates' responses and for the correction of his own errors. The teacher then is a relatively silent guide who encourages active participation by her students. The students engage in the algebraic games of permutation and of transformation, i.e., the generation of new words through the processes of substitution, addition, insertion, and reversal.

Some Words in Color reports

The only Words in Color statistical evidence prior to June 1966 comes from an unpublished report of the Milwaukee, Wisconsin, County Department of Public Welfare. They conducted eight Words in Color classes in the welfare center in Milwaukee. These adult classes were taught in two-week periods beginning August 1, 1964 and ending March 5, 1965. The classes were taught by PTA volunteers with no previous teaching experience. Some instructors had earned only high school diplomas. The 119 students ranged in age from nineteen to sixty. All of the students were recipients of county welfare. Some had been on welfare roles for only one month. One had been on welfare sustenance for twelve years. The IQ's of the students ranged from 53 to 104. Most of the students had come from southern states.

After thirty hours of instruction the mean gain on California Reading Test scores was .93 years, representing classroom mean gains ranging from .54 to 1.66. The reports did not include tests of statistical significance, but the rule of thumb (*1*) says that one can expect only as much gain as is represented by the time spent in the classroom; so, based on the equivalent of six days, one could have expected only .0326 percent of a school year's gain. The experimental classes, however, achieved a mean gain of .93 of a school year.

Dr. William G. Dodds, Jr., principal of Indian Hills Elementary School in Euclid, Ohio, as part of the requirements for his Doctor of Education degree from Western Reserve University, completed a dissertation in 1966 entitled "A Longitudinal Study of Two Beginning Reading Programs: Words in Color and Traditional Basal Reader." In his study he followed the progress of two kindergarten classes through the second grade. One class used Word in Color beginning in the second semester of kindergarten; the other class was given traditional reading readiness in the kindergarten and in the first grade learned to read via the Ginn basic reading series.

At the end of the first grade and at the end of the second grade the 38 children, 19 from each class, were given California achievement tests. From an analysis of results from the lower primary tests at the end of the first grade, he found the achievement of the Words in Color group statistically different in reading vocabulary ($P = .002$) and in spelling ($P = .0001$). At the end of the first grade, children taught with Words in Color had a higher range in vocabulary scores than the children taught traditionally. The range of the Words in Color group was from 2.1 to 3.6; that of the children taught traditionally was from 1.5 to 2.6. There was also a difference in arithmetical reasoning, but the difference was not statistically significant. At the end of the second grade the results again favored the Words in Color students in reading vocabulary ($P = .004$) and in spelling ($P = .002$). Again, mean comprehension scores were higher for children taught with Words in Color, but also again the results were not statistically significant. In arithmetic fundamentals the results were statistically significant in favor of the Words in Color children, at the .005 level. Testing at the end of second grade revealed that children taught through Words in Color were still superior to others in word recognition. Tests will also be give at the end of third grade.

Throughout the United States teachers are trying out the Morphologico-Algebraic approach to teaching reading. There are as yet, however, no published analyses or research studies other than those already mentioned, except my own doctoral dissertation, which will be discussed later in some detail.

Marjorie MacDonald, reading supervisor of the Boardman schools, near Youngstown, Ohio, has written to me about her experiences with Words in Color during the three years that they have tried it. She says that at the end of the first year "more children moved out of the low group that year than in any year previous to the use of Words in Color." She further states: "The first year we had Words in Color (three years ago) we tried it with our lowest groups in first grade. At the end of the year our psychologist did a study that showed that the majority of these lower groups were ready for second grade work. A few had not succeeded, but we had more people move out of the low group that year than in any other year. There are very few words that these children, at this time of year, cannot figure out or make a very good attempt at. They are not confined by any set vocabulary. Many of these children can pick up third grade readers, newspapers, etc., and read them. In every spare moment that these children have they are reading library books. They can choose from quite a variety as very few words will stump them. We find that even those at the bottom of the class have picked up enough to function."

Margaret Marks, first grade teacher at Stadium Drive School in Boardman writes: "Test scores for such basic systems as Ginn and Scott, Foresman resulted in much higher scores en masse after experience in Words in Color. Superior scores seemed to be achieved with comparative ease. Low average scores were less frequent. Results in tests such as California Achievement Tests placed all children above grade level—some three grades beyond normal level, few if any below grade level.

"The philosophy behind Words in Color is its most outstanding attribute—teacher subordination with pupil domination. I found this same philosophy permeating my teaching methods in other subjects with most satisfying results.

"Words in Color is very satisfying in areas of independence, giving fast learners more power than any phonetic program I have previously used, and offering the slow learners the support and mastery necessary to apply sounds in independent word attack as well as reading for meaning. It encourages much individualized reading because of confidence and mastery gained through Color (supported by reports from amazed and pleased parents). Children select and read with ease books beyond their grade level.

"Children at the bottom of the class learn slowly and progress slowly in color just as they have done or would do in any basic series. Color, however, gives them ability to attack words independently and read for meaning much earlier and more effectively than any method I have previously used. *New word presentation* just disappears from procedures in reading lessons.

"I am now working in my third year, having worked with immature, slow-learning and accelerated children."

Margaret Bast, Elementary Supervisor of the Stark County Department of Education, writes: "Last spring, several of our local school districts incorporated Words in Color in their summer remedial programs.

"Generally, the results of the six- and eight-week programs were very good. The junior and senior students gained the most. Also, their attitude toward schoolwork was improved. Follow-up studies being conducted indicate that a high percentage of the students are continuing in their schoolwork with a degree of success that would not have been possible without Words in Color.

"A few teachers feel that is boring for them. One remarked that he could not understand how his high school students could have sustained interest in the program. He readily admitted that they were actually reading and writing perhaps for the first time. He will use the program again because it works."

Harriett Bentley, reading coordinator for the Rocky River, Ohio, schools reported to the N.C.T.E. in 1965 on the schools responding to a questionnaire she had sent out in reference to their experiences with Words in Color. These schools reported back on a very enthusiastic note.

The Rocky River schools are completing a three-year pilot comparative study of classes using i.t.a., Words in Color, and basal reading programs. Their report is not yet publicly available. The children have in their first, second, and third years gone directly into literature, social studies, and science programs.

A number of doctoral dissertations are now in progress.

These include one on the junior high level in the Euclid Public Schools and one on the elementary level in Rocky River, Ohio. Willoughby-Eastlake, Ohio, schools are comparing ten Words in Color classes with ten traditional classes, and schools in Cleveland Heights, Ohio, will begin a pilot study with two classes learning through Words in Color and two classes learning with the Initial Teaching Alphabet.

"An Evaluation of Words in Color or Morphologico-Algebraic Approach to Teaching Reading to Functionally Illiterate Adults"

This investigation was designed to measure the progress of adult illiterates who received thirty hours of instruction in reading. The control group was composed of five adult education classes selected by the Cleveland Board of Education and taught by traditional methods. The experimental group consisted of five classes sponsored by PACE (Plan for Action by Citizens in Education), taught by the Words in Color approach. Tests were administered at the beginning and conclusion of the instructional period.

Summary and implications. Seventy Cleveland, Ohio, inner-city adult illiterates, 37 from the control group and 33 from the experimental group, were studied to determine the efficiency and effectiveness of Words in Color, or the Morphologico-Algebraic approach, for teaching reading.

Two approaches were presented in the evaluation of Words in Color. The first included an analysis which tested the basic hypothesis in null form: there is no significant difference between the reading achievement gain of functionally illiterate adults taught by Words in Color or the Morphologico-Algebraic approach to teaching reading and those taught by a traditional reading method. In order to test the null hypothesis pre- and post-test results on the California reading tests were obtained, and the *t* test of differences between means was used.

The second approach was a descriptive one. It involved an evaluation of the impact of the method upon the learner through observation of traditional and Words in Color classes. Ways in which students and teachers approached problems in decoding were observed. The application of learning theory and its effect upon learning was an important concern. The descriptive study also evaluated the performance of eighteen students whose pre- and post-test scores on the California test were the highest and the lowest in their groups. The four highest "gainers" and the four lowest "gainers" from the control group (i.e., traditionally taught classes) and the five highest "gainers" and the five lowest "gainers" from the experimental group (i.e., Words in Color classes) were interviewed.

Interview data of these eighteen students from the total seventy students of both groups provided information about the social structure of the families, early educational history, present occupational and home status, and reactions to the recent adult education experience. In addition to the direct question interviews, the verbal projective Who Are You test and the nonverbal Draw a Person, Tree, House tests were administered to obtain information about the self-concept and emotional adjustment as it affected the test results.

The effect of the traditional and Words in Color reading methods on the auditory discrimination and visual function of the eighteen students was also noted.

Analytic approach. The vocabulary, comprehension, and total California Reading Test raw scores were used to compute pre- and post-test differences. The gains within the experimental group in each case were statistically significant. The losses within the control group could have occurred by chance. The *t* test of statistical significance, using the Cochran and Cox adjustment where there was not equal variability, showed the mean difference of the experimental group to be significantly higher than that of the control group for each of the raw score sections referred to earlier, i.e., vocabulary, comprehension, and total.

The vocabulary, comprehension, and total California Reading Test grade scores were also used to compute pre- and post-test differences. Here again the gains of the experimental group were statistically significant within the group in the comprehension section, and again the losses of the control group could have occurred by chance, except in the comprehension section, for which the loss was statistically significant. Once more the gain of the experimental group in comprehension was significantly different from the loss of the control group, at the .001 level as measured by the Cochran and Cox modified *t* test.

An analysis of the students in each group showed that 43.2 percent of the control students made gains on the California Reading Test total score while 56.8 percent did not. On the other hand, 75.8 percent of the experimental group made gains while 24.2 percent did not. The chi square test of significance revealed that the experimental group's gain was significantly different from the control group's at the .01 level.

Based on the *t* test of statistical significance, modified where necessary by the Cochran and Cox formula, the null hypothesis was rejected. Those students taught by Words in Color, the Morphologico-Algebraic approach, were significantly superior in reading as measured by raw and grade level score differences and by the numbers in each group who showed gain.

The experimental group's gains in reading were significant in spite of having had teachers of less teaching experience and educational training. The experimental group was also at a disadvantage since they had a lower mean IQ than the control group as measured by the Revised Beta examination. The control group's mean IQ for the seventeen students for whom test scores were available was 84.1. The experimental group's mean IQ for their 33 students was 73.7. An examination of other confounding variables such as auditory discrimination, visual function, and color weakness revealed that the two groups were either comparable, or that the experimental group was at some disadvantage.

The statistical evaluation indicated that under the conditions of this study the Words in Color approach was superior. These students maintained an even, consistent gain. The students taught by a traditional approach had large variability in before and after test results, indicating unstable, scattered scores. Although most of the consistent loss of the control group could have been due to chance, it might have reflected the inappropriateness of traditional methods for concentrated brief instructional periods. It would be valuable to conduct the study over a longer instructional period to see whether or not findings similar to those of this study would be found. The results of this study under conditions in which the excellent teachers of the control group had greater training and experience than the teachers of the experimental group would seem to imply that the cause of the significantly superior results was the method and not the superiority of the teachers.

It should be noted that color weakness was not an inhibiting factor since color weak students did as well or better than those with no color weakness.

Descriptive evaluation: classroom observations. Observations of both traditional and Words in Color classes lead the writer to the following descriptive evaluative summary of Words in Color. The materials of Words in Color provide a learning situation which structures the separation of the figure ground of the instructional materials and the rest of the classroom through the intense stimulation of the chart's color morphology.

Teachers of Words in Color follow five major procedures:

1. They give students the responsibility for evaluating their own and peer performances without relying on teacher criticism.

2. They work with the erring student through inductive questioning; they lead him to see relationships rather than call on another student for a correct response. Emphasis is on discovery principles which stress processes leading to response and on many correct answers rather than one correct answer.

3. They use an activity approach which stimulates manipulation and internalization of conscious processes of controlling the formation of new words through addition, substitution, insertion, and reversals.

4. They place emphasis on dialects and many different ways of pronouncing words rather than on rigid uncompromising standards.

5. They concentrate on the code of the language and its relationship to sounds the speakers make. Observation further showed that inexperienced experimental teachers could utilize the power of the Words in Color methods and materials to develop an awareness of processes for problem solving.

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Color as an Aid in Early Reading Instruction

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THE INTRODUCTION OF COLOR as a valuable aid to the teaching of reading is new in education. Although Words in Color is the only reading program in which color is a significant aid, it is not the color alone which we should consider, we must consider instead a complexity of assumptions, facts, and procedures which, in practice, give a very different impression from the one that suggests that all one has to do is to point to words in color and the children will learn to read.

Two aspects of Words in Color will be discussed: 1) how color is used in early reading instruction and 2) how Words in Color is not basically a reading method but is rather an approach to learning.

Essentially what is done in Words in Color is to categorize by color identical sounds, regardless of spelling. The importance of color in the teaching of beginning reading is best demonstrated by having some children show what can be done. My method of presentation is a contradiction of the approach and method I wish to communicate; nevertheless, let's improvise. We can imagine a class of first graders sitting in front of a teacher. Because they cannot answer for themselves, the reader can play the game and answer for them.

Demonstration of method

The teacher prints an *a* on the overhead projector and taps it, saying "*a*" (as in *cat*). She then taps the *a* again and indicates that the pupils are to repeat it. The teacher taps it again and again, using several rhythms and simple combinations, such as *aa, aaa, a, aaaa, aa, aa, a a a, a aa.*

"See what you already can do. You can say the sound as many times as I tap. You could be shown how to write the signs, too, and this can occur in the very first lesson. You can use your sense of timing and of rhythm. You can distinguish between *aaa* and *a a a*."

Beginning with what may seem to be a new language, the children can read words and phrases. I deliberately say "words," for there is no question at the moment whether these are words in English, Spanish, Latin, Amharic, or any other language. We know most of them are not English words, and the children are hardly concerned for they are enjoying the game.

This primitive language, which up to now possesses only one sound—*a*—is then expanded. The teacher prints a *u* in yellow and says the sound is *u* (as in *up*). She again points to various combinations of this sound as she did with the white one.

"You can see that you play the game with the yellow one just as you played it with the white. Your learning grows. But there is something you can do now which accelerates the process. The two different signs *a* and *u* can be combined: *au, ua, auu, aauu, uua.* You have shown me that you can reverse, permute, repeat, add, substitute, insert one sound between two others, and vary your timing." All of these are abilities that every normal child possesses. And we are capitalizing on these abilities, informally at first and in a game-like atmosphere; but it is serious, as we know that all of these operations are the bases of language and of reading.

Briefly, the *i* (in pink color), the *e* (in blue color), the *o* (in gold color) are introduced in a similar way, the five short vowel sounds. The *p* (the brown colored one) is next, and because this is a consonant (con-sonant = sounding with), the class is told that *p*, by itself, has no sound. When the pointer moves quickly from white to brown, however, the word is *ap* and the letter *p* is capable of being sounded. Other combinations are pointed out, such as *ip, up, ep, op, pa, pu, pi, pe, po, pap, pop, pip.*

"Have you noticed something? Have some of the words begun to sound like English words?" So it is with the children who quickly feed back by their intonations and expressions the information that they already have words like *pop, up,* and *pep* in their everyday speech.

The magenta sign, +, follows; and then two signs of the same shape, the curly green *s* and the curly purple *s*.

A week or more of lessons has been condensed into a few paragraphs, but we can see that the pupils learn to play the game better and better. By this time, although the vocabulary is small, the possibilities are large. The students have access already to a great deal of reading and they create much for themselves. With the pointer they find sentences:

Pop is up.
Is Pop up?
Pat, it is Pop.
It is as is, Pat.

Yes, the color is important. It provides a name for each sign without having to use the alphabet name. "This is the pink one," avoiding use of the correct alphabetical name. But there are many other sounds for the letter *i*. In this learning process, however, it is the color which will at first determine the sound. The rule is that the same color always makes the same sound. The teacher may print ***a***, ***au***, and ***ai*** along with the words ***pat***, ***laugh***, and ***plaid***, demonstrating the same sound for the same color.

Color, too, helps in the graphic study of the words as they are presented. Children note the color groupings and the corresponding sign differences. They seem to photograph mentally the signs for later correct spelling. For the new words successively met as the children progress through the twenty-one charts, the color key shows the pronunciation. From this point on teacher help is not as necessary, for the children enjoy discovering a new word on their own.

Essence of method

Now that the basic mechanics of words in color have been briefly described we must next look at how it is more than a method—it is an approach to learning. The children are engaged in a creatively challenging set of situations which makes the usual reading look like something from the Dark Ages.

The kind of introduction to language sounds and reading can vary a great deal, and it may be different for each student. This approach recognizes in practice something we have mouthed for years. Each child is an individual and is different. Therefore, the teaching must be different for each child.

What actually happens in the lesson, therefore, cannot be forecast. There is a body of facts which the teacher possesses. She knows the signs, the colors she will use, the order of introduction, and the sounds she will assign to each color. But these are not absolutes, and not all information has to be presented. The teacher must always be alive to the children's responsibilities for learning. She can organize them into small groups so they can play the games on their own. As the charts go up on the wall, the children can do much learning independently and this kind of learning is essential.

The teacher also is the authority in spelling, in conventionally accepted meanings, and in the way the signs are shaped. She also has printed primers, a word building book for each child, and challenging exercises as the first stages of this reading approach are passed. She has her art as a teacher, too, and this she will have to use every moment. This cybernetic method of teaching reading depends greatly on what the actual responses are from the children, on the teacher's instant diagnosis of the problem, and on a rapid decision for prescription.

Tommy says *aa* when the pointer taps three times. The teacher asks him how many times he said *a*. Tommy says three and the teacher perhaps lets the remark pass by. But, on the other hand, she might ask the others what they thought Tommy said. The students are soon adopting an attitude of seriously discussing what they are saying and doing. There is, however, no pressure of right and wrong. Everyone, including the teacher, makes errors, is inattentive, becomes slow here and there, but this is recognized as natural and should not be condemned. The key is that the students are taking a great deal of responsibility for their own learning. The clues are there, in the colors, on the charts, in what the other children say, and in their own experiences. But it is the *learner* who has to do the learning, and it is the teacher's job to present the situations to diagnose and to present more situations. Then, she should stand out of the way, patiently, and let the children learn. She only intervenes when her presence is vital, and we are learning these days that this is not as often as we used to think.

The behavior of meeting and tackling challenges is inculcated from the start. The children create new sentences and new stories from knowledge already possessed. This procedure breeds sincere intellectual inquiry and self-confidence, rather than the all-too-familiar expression, "Oh, well, what's the use?" The children are actively involved in the learning process.

Philosophy of method

We have to consider very different attitudes within the reading lesson. We have to ask ourselves what the student really gets from our traditional practices. Are we treating him fairly by presenting the usual diluted printed material, by condescending in vocabulary presentations, and by making poor estimates of his innate ability so that we strain off intellectual challenges? Are we afraid that we shall disturb him? Are we sure that correction is the best remedial procedure for errors made? Are we certain that we shall do better teaching if the class size is lowered, or would a new method accomplish our goals even in large classes?

Words in Color, therefore, is basically not a method of teaching reading. It is an approach and a procedure to children's learning. This approach and procedure is applicable to all aspects of the curriculum, but when we apply it with colored signs, a pointer, certain books and charts, then reading and writing become important by-products. But these are not the only by-products; there are many others.

Words in Color assumes that the child already has great intellectual abilities by the time he reaches school. The child could not have learned his mother tongue unless he accepted the responsibility for his own learning during his first two or three years. He found out how to speak, while also busily occupied in learning how to stand, walk, jump, and even how to twist mother and father around his little finger at times. All of this is learning in a situation which presented the child with no lessons, no teachers as such, no texts, and no incentive other than what the child felt and expressed naturally within himself. He was in a situation where he had to learn and he did learn. We need only to find out how to maintain this type of motivation in school, and the learning problems would be greatly simplified.

The child can help us in his own learning, and in this approach he does just that, provided we are prepared to watch, listen, and ponder upon what is happening from the child's point of view. When the teacher does not verbalize, she has more time to listen. Caleb Gattegno, the originator of Words in Color, says in a book called *Words in Color, Background and Principles* (*1*):

> To refrain from telling the learner is not enough. Only if we give our

> bility for the part that must be his, the better[*]

The teacher has to be sensitive and tread lightly, although firmly.

I taught in the traditional manner for ten years before I discovered Words in Color. I thought I was being kind when I gave the children contextual clues to words they didn't know. I also helped them memorize *all* the phonic rules and *all* their exceptions. I was enthusiastic and full of praise for even the slightest achievement. I almost let some fellow teachers talk me into publishing some stories I wrote to help teach the short vowel sounds. I'm so glad I procrastinated! I would be embarrassed to see my name on these stories after learning what I have these past three years.

When I met Words in Color I was forced to develop fresh insights into the nature of children's learning and into the English language. I could not return to the traditional methods of teaching if I tried.

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[*] Chicago: Encyclopaedia Britannica Press, 1962.

Subordination of teaching to learning

The success that teachers of Words in Color have had perhaps lies not so much in the color but in the organization of our language and even more importantly in the philosophy of learning that is inherent in the approach.

Succinctly, it is what is called the subordination of teaching to learning. This means that the teacher must discipline herself not to lecture but rather to be a responsive teacher who is in the classroom to motivate and to assist the children in their own attempts to learn. The same responsive teacher must allow the student to use his own intrinsic motivation and enforcement, which are not entirely dependent upon the extrinsic approval of a teacher. How often have we overtaught a subject that we know well, forgetting the joy of discovering a new thought or process for ourselves. Dr. Gattegno puts it very well when he says, "I can't eat, and you grow fat." Learning comes *through* the child not *to* the child.

There is still much to learn, many advances to be made with this approach and its relevant implications into all areas of the curriculum. One thing at least is certain. There are very few teachers today who will deny the need of getting the students to take more responsibility for their own learning, and few elementary teachers who will deny the belief that the early years of kindergarten and the elementary grades are vital in the forming of good learning attitudes and practices. Here, then, is one evolving set of practices in the art of teaching reading that should not be ignored.

Reactions to Using Color in Early Reading Instruction

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Words in Color is one of a growing array of approaches to beginning reading instruction. Like other approaches, it has both proponents and opponents. Six years have passed since its introduction in the United States, yet the very few research studies completed to date are quite inconclusive and invite much deeper questioning. This questioning and need for further research applies to many other new methods and materials as well.

Guy Bond (8) reported the results of the national first grade study in which twenty-seven different approaches to beginning reading instruction were examined and, to some extent, compared with each other. Words in Color was not one of those studied. Bond's summary may serve as a cautious introduction to the examination of Words in Color:

> No one approach in beginning reading instruction is so outstanding that it should be used to the exclusion of others. The effectiveness of any approach is increased by use of techniques from other approaches. Any given approach produces better results than do others in one or several reading outcomes (*e.g.*, vocabulary, comprehension, spelling, word meaning) but not all. There is a greater variation between teachers than between approaches.

It is unfortunate that Words in Color was not among the methods studied.

The research to date on Words in Color is difficult to evaluate since there exist few systematic studies. Lillian Hinds in her presentation described three studies: the Milwaukee study, the Dodds study, and the Cleveland study. The Milwaukee study should be skeptically examined. There was no control group, How well might these adults have learned to read with other methods of instruction? The teacher variable apparently was not controlled. The validity of the IQ's reported on the students is highly suspect. Little credence can be given to the scores for two reasons: 1) The subjects are described as coming from disadvantaged backgrounds and 2) Typically, any subject poor in reading is handicapped on most intelligence tests. The "rule of thumb" used to measure gains is also to be questioned. Hinds attempts to treat thirty hours of instruction as though it were but six full school days, then states that six days is about .03 percent of a school year. She then proceeds to make a mean comparison using the derived percentages. Based on classroom instruction of one hour of the school day devoted to reading represents not six days, but thirty days, or one-sixth of a school year.

The second study cited, the Dodd study, does not report the control of two crucial variables—teacher competency and the mental age differences between experimental and control groups. The results reported at the end of second grade are based on only nineteen cases per method. What happened to the rest of the children? Which children were "lost" in each group—the high or low achievers? How much faith can be put in conclusions based on so small a sample and with such minimal information about the sample?

Hinds intersperses her report of research with glowing testimonials. In the absence of research, opinion reigns. The enthusiastic testimonials given to this method as cited by Hinds are typical of testimonials given to many new methods in advance of bonafide research. They are strictly opinion, unsubstantiated by even the simplest of accepted research designs in education. They are of little value to a researcher in attempting to search for improved methods and practices.

In commenting on her own study, Dr. Hinds presents a more complete and detailed description of her investigation with the Cleveland adult illiterates. The major procedures followed by teachers are carefully and concisely described. Yet, additional questions appear to be in order:

How does one define an adult illiterate? Below what grade level is one considered to be illiterate?

Are the statistical results based on *all* 37 control and *all* 33 experimental subjects? What conclusions are based on the performance of 18 subjects? IQ's are reported on less than one-half of the control group, and color blindness test scores are available on only two-thirds of the control group.

3. What were the specific criteria for the selection of the 18 subjects who comprised the descriptive approach?

Other reports on the use of Words in Color have appeared from time to time in lesser known journals and newsletters. Estelle Harris (5) wrote enthusiastically about this method after experiencing success with eleven elementary school children. She says: "After two and one-half hours of instruction per week for 22 weeks with only the 'Words in Color' method, these pupils showed a gain in reading of six months to one and one-half years." Miss Harris was simply reporting an action research study which she conducted. Her very inspiring article had a very large reading audience (*NJEA Review*), and this method to the average classroom teacher sounded extremely promising. No doubt, many other teachers would love to jump on the bandwagon. This perhaps was the prime motivating factor in Fry's critical letter to the *Review* (2) concerning Harris' research and Words in Color. In part he states:

> Recently, I bought a copy of the New York Herald for April 15, 1865 (the day Lincoln died) and it contained a full-page advertisement for a liniment backed up by about 50 testimonials. It is indeed amazing that this liniment is no longer being sold because there are testimonials which state that it will cure sore throat, stiff knees, headache, and numerous other ailments (poured in bath water, it aids pimples and promotes sleep). One should not overlook that it is also very beneficial for many ailments of horses and mules. Last but not least, I noted that one of the testimonials was signed by an M.D.
>
> If there is any analogy for the teaching profession, I leave it to your readers.

This verbal exchange is cited as an example of the conflict that comes about when new departures in reading are reported. In evaluating any new program or approach to reading, we should not reach even tenative conclusions until the method has had a fair trial. Words in Color as a method of teaching reading has not been subjected to rigorous research. Since there are little or no hard data, we must fall back on other means of evaluating this method. We must do it fairly.

These questions we must seek to answer:

1. Is the method educationally and psychologically sound?
2. Does it incorporate what are considered to be sound learning principles in the teaching of reading?
3. Is it superior to other methods:
4. Is it efficient, effective and economical?

McKee and Durr (6) have written about questionable attitudes and ideas inherent in the use of both Words in Color and the Initial Teaching Alphabet. Fry (3) has also stated his opinion of Words in Color.

The problem and the question of how the color-blind or color-weak child functions has yet to be fully answered (*1*). Many educators are concerned with this aspect of Words in Color.

The following tentative answers to questions noted above are based on my background of teaching and research in reading. Although the suggested answers are open to argument and rebuttal, until conclusive evidence is offered, I will stand on the following:

1. The method has not proven to be superior to any other method of reading instruction.

2. This method, alone, or in combination with other methods, has not proved to be superior to other approaches.

3. This method, when used with remedial readers has not proven to be more effective than the combination of methods generally accepted as the foundation of a sound remedial reading program.

This position is supported by others who have studied the method or aspects of it.

Not to be overlooked is the fact that how a teacher uses this method may be more important than the method itself. For the teacher who is considering the use of this method, certain cautions are warranted:

1. Existing materials make no provision for the development of prereading or reading readiness skills.

2. No provision is made for determining how well the child is progressing. No informal tests (weekly or monthly check tests) are available to the teacher.

3. The level of the words and sentences the typical child is to read is far above his listening, speaking, and meaning vocabularies. The sentences do not appear to be geared to either the interest or intellectual level of the typical child. According to a comparison of the words on the chart with Murphy's (*7*) list of words in the speaking vocabulary of children in primary grades, over 20 percent of the words on the charts are not in the speaking vocabulary of primary grade children.

4. The supplementary materials, word building and worksheets, allow the child to make as many non-words as words, as

many misspellings as correct spellings and give much practice in nonsense syllables and utterances which may have little meaning or interest to the average child.

5. The method is not linguistically sound. Forty-seven colored sound symbols do not accommodate the fifty-four different sounds in the English language. Some phonemes have to be altered to fit into the color scheme.

6. The child tends to rely on his "sounding out" skill rather than on learning to remember words through visual memory. He may tend to re-sound out every word he encounters regardless of the number of times he has seen it before.

7. Words in Color, along with some other essentially phonetic approaches, tends to produce slow, laborious, word-by-word readers.

8. Although the child learns to write earlier using this medium, little or no provision is made for correctness of letter form and size and directed teacher lessons in learning to write letters correctly.

9. Children and teachers in a given teaching group should possess the same regional dialect in order for the linguistic applications to function.

10. The physical makeup of the charts are defective. The charts are printed on high gloss stock (newer charts have less gloss) and may produce a distorted image if the illumination in the class is inadequate. A child who views a chart from an angle may experience a distorted glary image.

11. The problem of color blindness and Words in Color may be grossly underestimated. Dvorine (*1*) estimates color blindness in 10 percent of the population, whereas Gattegno (*4*) suggests that it is less than 5 percent. Gattegno further suggests that completely color-blind children "will be able to benefit from the logical and systematic presentation of the signs of the English language." If this be true, may it not also follow that the color may *not* be of consequence at all, but rather, that the logical and systematic letter and word groupings are more important than, for example, the use of color-coded letters?

In spite of these eleven statements of caution, it must also be noted that children have learned and do learn with this method. Or perhaps, and more likely, this method plus a dedicated, motivated, interested, and highly competent teacher who also utilizes or borrows many elements of other methods is the key ingredient.

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Discussant: JACK G. HOOK,

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There are many reading methods and approaches that have been described by glowing statistical and observational reports of superiority over "traditional" methods. Are these methods innovative as far as making reading any easier to teach? We still have the problem of an extremely difficult language that linguists languish over. Until we get up enough gumption to change our spelling to be phonetically true I feel convinced we will always have our problems with a certain portion of our population.

Any well devised method, or methods, of reading, can generally do the job of teaching reading to children or adults, as long as the students are stimulated to continue the learning process in this particular skill. To go a step further, an eclectic approach utilizing the best of sight vocabulary methods, phonetic methods, structural analysis skills taught in context—and any other productive tidbits we can toss in—seems to be our best bet in teaching the skill of reading. Even this can fail unless we give supreme importance to the great catalytic process—the *teacher* relating to the *learner*.

Research supports what most of us already know through experience. That is, the teacher's greatest lack is detailed and proper instruction in how to teach reading. But if we train a teacher in several methods which can be used in a teaching situation, we are more likely to have a teacher who is secure and flexible in meeting the needs of groups and individuals within those groups. A secure teacher can then more readily center attention on the center of attention—the child. Identification then assumes its proper perspective in the learning process. A teacher who identifies in a positive manner with a child generally has a greater chance of succeeding than one who doesn't.

My point is that reading (as well as anything else in the curriculum) may best be taught if we "jazz up" the program to maintain a high level of interest over extended periods of time. Principles of learning bear this out, and I firmly believe that the successes of so many of these programs we read about come as a result of the learner's being offered something new and different.

The linguistic-phonetic system of Words in Color appears to be one of the brightest methods available, utilizing good techniques of learning. Among other promising features (already reported) are these:

It is ***a program*** teachers can use.
It's fun!
It is a logical way to decode an illogical language.
It puts the "cards on the table" through its phonic code charts (*a* does have many pronunciations).
Learners do not feel a sense of failure.
Instruction is primarily oral, so that learners are actively involved at all times.

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Dr. Hinds' report of studies, and reaction to those studies, indicates marvelous results from the use of Words in Color, and no doubt there are other successes to be observed across the nation with those using this method. Perhaps we should be everlastingly suspicious, however, and question successes to some extent. The major portion of the report given by Dr. Hinds dealt with a research study of teaching reading to functionally illiterate adults. It pitted traditional methods versus Words in Color. In the first place, I was left wondering what "traditional" meant. Is it individualized reading (traditional to some)? Is it Hay-Wingo (traditional to others)? Or, does traditional refer to the mechanics of using a specific method, such as a read-around-the-circle idea? The traditional method used might make a difference in the comparison. With the statistics today I suspect there are ways to find a justifiable balance.

Understandably, in this study there were a number of confounding variables, such as the lower IQ in the Words in Color group and the less than excellent teaching staff. However, it appears that a questionable assumption was drawn in one major conclusion. The conclusion: ". . . excellent teachers of the control group had greater training and experience than the teachers of the experimental group, would seem to imply that the cause of the significantly superior results was primarily due to the method and not the superiority of the teachers."

In working with literally hundreds of teachers through direct observation these past few years, it has been my experience that the inexperienced teacher, given proper direction in using a new reading method, will come up with more productive readers than the teacher who is armed with more training and has taught the same reading lessons in first grade for five to fifteen years. Therefore, the inexperienced teacher becomes the excellent teacher. Please look around your own school and see if this isn't true in too many cases. The criteria for describing an "excellent teacher" are still being determined through numerous studies being conducted today.

An omission in the report, "Studies in the Use of Color," has to do with weaknesses of the Words in Color approach. To the best of my knowledge no one has published any consideration of this aspect. Although the program is extremely outstanding, there are certain aspects which might be considered weaknesses to the average teacher:

> Use of charts. Ironically, the charm of the charts has drawbacks. By the time twenty-one wall charts and eight phonic code charts are displayed, the method has taken up sizeable space in the ordinary classroom. Even when five or six charts are being used to make sentences and/or phrases, it is difficult for a teacher to find the words and point them out rapidly.
>
> Color variations are difficult to distinguish.
>
> Transformations are very difficult to complete for children (and adults) from limited backgrounds.
>
> Impersonal teachers may easily forget the child-centeredness of classroom activity while working with mechanics.

Words in Color, then, appears to be one of the better "gimmicks" on the market to assist teachers to do the difficult job of teaching the skill of reading.

APPLYING THE LINGUISTICS OF SOUNDS IN WORDS

Unifon: A Sound Way to Read

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OVER 250 years ago, John Locke* wrote: "I have always had a fancy that learning might be made a play and recreation to children; and that they might be brought to desire to be taught, if it were proposed to them as a thing of honour, credit, delight, and recreation, or as a reward for doing something else." He described some toys that might be made to help teach children to read, and concludes: "Thus children may be cozen'd into a knowledge of the letters; be taught to read, without perceiving it to be any thing but a sport, and play themselves into that which others are whipped for."

That was many years ago, and there are still people in our schools today who think that long lists of words and syllables, memorization, drill, and stories that have little value beyond the dubious one of using simple words and syllables that follow the rules are ways to teach children to read. We're quite sure we don't "whip" children into learning today, but every time a child's eyes glaze over in the reading circle as he listens to the mistakes of others, over and over again, he is being mentally coerced into a kind of learning that he would never choose for himself and that might well serve to keep him away from books entirely on that happy day when he is free to choose all his own activities.

Companion to this traditional method of teaching children to read is the American teacher's love of the textbook, and her even greater fascination and preoccupation with that interest-eating dragon of our classrooms, the Teacher's Guide and its monstrous offspring, the Workbook.

"Don't think, dear teacher," these monsters sing temptingly,

Some Thoughts Concerning Education, with Introduction and Notes by The Rev. R. H. Quick, M.A., 2nd ed. (Cambridge: The University Press, 1889), pp. 129-30, 148.

"don't consider the process of reading or how learning takes place. Hit on that short vowel and give them a few rules for the doubles, but don't free these children to read and write creatively in words that they love and delight in. At least don't free them until you've thoroughly convinced them of the importance of straight backs on the letters and correct spelling, and the sheer poetry of lines that repeat every word at least three times, just as we always say in life, 'See, see, see. See Jim run. See Tom run.' Repeat and repeat and repeat, even though they neither see nor feel any rhyme or reason for doing so."

Keep this up, and some children will never learn to read, while others will read only what they must. For every child who finds his way to the utter delight of complete absorption in a book, there will be at least two who never quite forget the tedium and the long-delayed process of their first, not very successful, experiences in reading.

Contrast this with the teacher who brings an entirely new approach to reading, a *sound way* to read, if you will. Approaching this idea quite literally and figuratively, she says to herself: "If I begin with an alphabet that is consistently one sound for one symbol, and present the symbols as a secret code that is so much fun to learn my children won't even know they're learning it, might this not help me to pay less attention to the sounds of English, rather than more, and free us all for early experiences with meaning?

"And what sort of meaning shall it be? How did these children first learn to talk? By naming people and objects close to them. Good. Well then, on the first day when I start with the working sounds of *a*, I'll sneak in a few consonants, *b, c, l, g*, and *m*. This, together with the short, long, and open sounds of *a* will give me all the equipment I need for a good rousing discussion of baseball, the bat, the ball, and the game. From there we could go on to some other kinds of ball games children like, or perhaps talk about things to eat. Yes, I can have a couple of real apples when I present the *a* sound and cut them up so that everyone can have a piece of apple to eat. What fun this will be—playing at secret code learning with the class. We'll build a treasure chest for the object-symbols, and *never* be guilty of putting a single word on the board because it rhymes with another. Only the words that have meaning—their meaning—will be used.

"I think, on the second day, I'll introduce the first Buildabook. What a joy! How beautifully language and thought and experience can come together here. Everyone can draw his own picture, then his house, his friends, pets—all things that have meaning for him. I'll just label the pictures for him in this first book, unless somebody catches on fast enough to begin to write simple sentences. I'll remember that he learned to talk by simple words, though, and sometimes only parts of words, at that. I must be careful to use these experience books as journals of each child's own thoughts and background, and not try to make a 'board lesson' out of any of these pages. What fun this will be. I'll get to know my children as never before."

And so the teacher dreams, enchanted by the prospect of bringing the reading process to life for her children, in her own way and as the product of the best thought she can bring to bear on this all-important process of learning to read. For our dream teacher has read far and wide about the process of reading instruction. She has accepted some ideas and discarded others, and now, for the first time, she is really being given the opportunity to teach, not parrot some one else's ideas about how reading begins.

Her teacher's guide is a flexible, loose-leaf notebook that says on the first page "A Design for Teaching Reading." It began as a very sketchy design, wanting only to trace in the faintest outline, the most imperceptible sketching. Only thus, we reasoned, will the teacher be free to use her own ideas, develop her material in a way that suits her special children most exactly. We'll give her storybooks and puzzles, and fun things for the children to do, but the heart and soul of this process will be what her particular children, living in their own section of Detroit, influenced by their own living—good or bad—have to say. The real material of this kind of reading comes from what each child is thinking, and from the kind of love and interest their teacher holds for them. With this combination they'll be piecing words together, brimming over with ideas and things to say, and reading and writing stories without ever knowing that any teaching has taken place. Truly, here is a design for creating, for bringing life into the classroom and into reading in a way that will never be forgotten by any person lucky enough to be exposed to it.

So much for the dream, but how does the design work and what will it do? The word Unifon must be translated into some of the experiences we've had with it. In fact, our lovely, open-ended design book is now in process of being "just a little more structured, please" in response to teacher demand.

Not long ago I gave a talk to a business and professional women's club in Illinois. The talk was on creativity, and I mentioned Unifon as a highly creative way of teaching children to read. At its close, a mother in the audience raised her hand and said if I'd like a testimonial on Unifon, she had one. Her daughter had been taught to read that way a year or two ago and "she now reads everything she can get her hands on." Another mother said she ran out of books for her daughter to read the summer after her first year in a Unifon school, and it was only when she found the child reading *Papa Hemingway,* a little too understandingly for the mother's comfort, that she made the weekly trip to the local library an order of first importance.

Another mother said to me, "I have two children and I thought the older boy had learned to read rapidly and well, but it was nothing like this!" Another little fellow learned to love reading the Unifon way and moved to Wisconsin in late December of his first grade experience. He moved into a classroom where the teacher knew nothing of this auxiliary alphabet, and yet he was able to go right on into a traditional program, do exceptionally well with his reading, and proliferate stories of a quality the teacher had never seen in first grade before.

In St. Louis there is a first grade teacher who is about as good a teacher of traditional reading as I have ever seen. She feels no need of Unifon, but the kindergarten that precedes her work does feel the need and teaches it, giving its children all the symbol-sounds and many little word and story experiences before first grade. Her first exposure to a Unifon-trained class brought this remark from our unbelieving, but good, first grade teacher. "I don't know what you've done to these children, but please keep doing it. They really are ready to read."

All over the Midwest, where Unifon has been used by teachers who have openly welcomed a new idea and worked for its fulfillment, we hear this comment: "I know one thing, I wouldn't ever want to go back to teaching the old way again." Chief among their satisfactions are the listening powers of children, a logical approach to figuring out words and meanings, great flexibility for trying new words, and the wonderful stories they get, right out of the hearts and minds of little children.

As for the children, they dearly love it and express an excitement and enthusiasm for reading that I have rarely seen equalled under any circumstances. One day I walked into a room just as the children had finished the Buildabook entitled "My Town." They dragged me back with such gusto to the work table to see their joint efforts at stories and pictures that for a minute I thought I might be their first eyewitness casualty in Their Town. And the book was good. I could see the narrow streets of the small town as I read and looked at the pictures: the gas stations lined up on one side of Main Street and the Five-and-Ten on the other, little girls shopping with their mothers at Tri-City or the A & P, and the trees and bushes over on the west side of town.

Another time, I watched two little boys, presumably very slow learners, spend the better part of an hour at an easel with letter cards, forming words, trying to trip one another on saying them. These were children whose attention span might be expected to be five or ten minutes, yet the hour passed by and they were still interested in words like *truck, bus, diesel engines,* and *jet planes,* words that they could say and spell and read, all by listening for sounds. That same day, over in another corner of the room, a little girl walked up to a second easel and formed this message, "Dr. Ratz came to see us today. We were glad to see her. She liked our Christmas decorations and the books we made for our mothers' Christmas present."

Test results are good, too. In the heart of the city of Indianapolis 12 Unifon classes were compared with 12 control groups.

At the end of the first grade the Metropolitan Achievement Test in Reading was administered to the 24 classes. Keep in mind that the Unifon children had spent the majority of the year in Unifon and perhaps the last two or three months reading traditional materials and that the test was a traditional one. The following results were shown:

In Reading Comprehension, four Unifon classes were lower than the traditional classes, one was the same, and seven were higher, with a range of 1 to 7 months in advance of the traditional.

In Word Knowledge, three classes that had used Unifon were lower, one was the same, and eight classes were higher than the controls. The range was 1 to 6 months.

In Word Discrimination, all but one of the Unifon classes were higher than the traditional ones, with a range of 1 to 9 months.

In Washington, D.C., a Unifon and a control class were tested at the end of the first year, and the Unifon children were uniformly lower than those who had been taught traditionally. Washington teachers of Unifon are in no hurry to transfer children until all the signs are clear for go-ahead, which means that some of these children had seen very few materials written in traditional orthography before the test was presented to them. Does this mean that Unifon was a failure in Washington? On the contrary—the number of classes put into Unifon the next year moved from one to five. The reading consultant, Mrs. Minnie Woodson, was interested in the program and arranged to have the two original classes tested in January of the second year. She found that during the first year the control group showed .85 gain in Word Recognition and .65 gain in Paragraph Reading, while the Unifon group showed .39 gain in word recognition and .35 gain in Paragraph Reading during the same year. (Remember: the Unifon used by this group was not used in the testing at the end of the year.)

During the next one-half year the control group showed gains of .26 in Word Recognition and .30 in Paragraph Reading, while the Unifon group showed gains of .49 in Word Recognition and

.40 in Paragraph Meaning, almost twice that of the control group. In Mrs. Woodson's own words: "Is the gap in gains closing? Will the next testing show that the Unifon group will make gains now that will close the gap [and] surpass the control group in gains? Further testing will prove the validity of this assumption." There will be further testing.

In New Orleans two classes are working in Unifon under the special Ford Foundation project being conducted in two schools under the capable auspices of Stanton Plattor, Emma Plattor, and Anna Henry. Careful testing has begun, in a concentrated, almost microscopic manner, and the results will be published as they begin to come in.

Has Unifon failed in any cases? Yes, and every time it has been the human factor that caused the failure. In Detroit, a large scale comparative testing program was begun with six different systems at the starting gate. Teachers were herded together in November, told to make plans to begin teaching by their particular method (no teacher was given the opportunity to make a choice of methods) in a week's time. Who can blame teachers for not liking a completely new alphabet that had been started after Thanksgiving, with little time even to learn it for themselves and with a full line of materials not yet developed for their use? We hung on for two miserable years, after which everybody involved decided to give it up and we shook hands all round, happy at the thought we might never see one another again.

In a little, narrowly provincial, town in Montana, a young woman is at this moment struggling against the preconceived notions of a group of parents who are not familiar with the Unifon method, but know they don't like it. The damage they are doing to their children by undermining the teacher and her program is incalculable, but they are convinced Unifon is doing it all. In spite of this, the teacher, who is intelligently leaving at the end of the year, says that her one regret is that she won't be able to show them how well Unifon really does work the following year. When a teacher keeps on liking a system in the face of community disapproval, there surely must be something there. The one redeeming feature here may be illustrated by a parent comment: "My little boy cries because he can't read the daily paper and he's been in school 7 months already." This needs no comment.

Other than complete mental rejection of something new by the parents or by a teacher who has been forced into a program she doesn't like, the results and opinions of Unifon are uniformly favorable. There is, of course, one other far greater result that no one has yet had the wit or understanding to measure. That is, the joy that can come to children who learn to read by having their teacher say to them, "Girls and boys, how would you like to learn a secret code? It has been written just for you, and after you've learned to break the code, you will start to read the way mother and daddy do."

Somehow, as I see this valuable tool of a forty-character, truly consistent alphabet begin to grow and develop, I share the excitement of John Malone, the Chicago economist who put the alphabet together. He calls it instant reading, but plenty of educational work has been done to get it this far and will need to be done in the near future. For one with a sense of adventure, of openness, a teacher or administrator who believes in being an educator as well, I have only one question: How would you like to learn to teach by a secret code that will make your class and their inside-out reading all your own? Do come along, the suspense and the follow-through are almost magic and, above all, make teaching a real joy.

Research Findings Concerning Phonics in Beginning Reading

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RECENT RESEARCH findings related to phonics instruction in beginning reading have been, on the whole, remarkably consistent. Such a statement cannot be made in regard to everything written "about" phonics by critics and educators during this period. Research on first grade reading instruction leaves little room for doubt that pupils exposed to systematic instruction in letter-sound relationships score higher on "reading achievement" tests at the end of grade one than do pupils who receive little or no such instruction.

This position has been consistently supported by research. Studies such as those reported by Agnew (*1*), Henderson (*7*), Rudisill (*11, 12*), Sparks and Fay (*13*), Bear (*2, 3*), and Bliesmer and Yarborough (*4*) are representative. These and other studies indicate that systematic phonics instruction associated with early reading results in higher mean achievement than do instructional programs not containing systematic phonics instruction. This is not to imply that there is complete unanimity of findings and conclusions among the hundreds of studies dealing with phonics instruction.

During the year 1964-1965 a number of cooperative first grade studies were carried out with support from the U. S. Office of Education. Whatever other criticisms might be leveled against these studies, the data should tend to dispel any lingering doubts as to the impact of phonics instruction on first grade reading achievement. Bond and Dykstra (*5*), in summarizing the data from these cooperative research projects, state: "In general, basal programs accompanied by supplementary phonics materials led to significantly greater achievement in reading than did basal materials alone." Further: "Word study skills must be emphasized and taught systematically regardless of what approach to initial reading is utilized."

An important outcome of the first grade studies will be the cumulative effect of the data as they are added to those of studies reported previously. There can be no question that, already, beginning reading instruction and instructional materials reflect an added emphasis on early phonics instruction.

Several other findings relative to phonics instruction are of interest. First, data from the first grade studies fail to support the position occasionally suggested in the literature that a mental age of seven years is essential for children to profit from phonics instruction. Second, no particular emphasis on phonics (minimal, moderate, or heavy) was found to favor either boys or girls as a group. Thus, phonics instruction apparently does not hold the key to reducing the reading achievement deficit of boys as compared with that of girls in beginning reading.

While there is little current debate on the generally beneficial effect of phonics instruction on beginning reading achievement, certain other questions related to phonics instruction have not been answered. The question of whether the superior reading achievement of first grade pupils that is traceable to phonic emphasis in instruction is maintained after the other pupils receive phonic instruction is somewhat clouded. Probably the most important variable which impinges on this issue is the type of instruction pupils receive in the later primary years. An initial superiority can be dissipated if later instruction is not geared to pupil capability or, stated another way, if the instruction is highly traditional, textbook oriented, and nondifferentiated in grades two and three.

A second unresolved issue in phonics instruction which has not been studied extensively is the relative cue value of various letters and letter combinations or the cue value of the position of letters within words. This question focuses on whether each letter in a word has the same word identification potential. It is likely that facile readers somehow profit from whatever laws operate in this area, or that they develop some shorthand system that works for them.

The facile reader may never realize that the identification cue value of the upper half of printed letters is greater than the cue value of the lower half. Yet this difference is fairly well established and quite widely accepted at the moment. A reader may not know that in his case the initial letter in unknown words carries much more weight, as a cue for unlocking the word, than do certain other letters, or that he perceives certain prefabricated printed units such as affixes as unitary wholes.

Research data on cue values are rather limited. Marchbanks and Levin (*9*) have reported that the initial letter is the most important cue in recognizing letter clusters, and that final and medial letters follow in that order. Based on extensive work with beginning readers, McKee (*10*) states: "Time and time again the author has found that in reading connected discourse first grade pupils can unlock strange words easily without knowing any of the letter-sound associations represented by vowels in those words . . . all they did was to apply the skill they had acquired in using context and consonant sounds together to call to mind the familiar spoken words for which the strange printed forms stand."

Another issue is the relative merit of alternative ways in which "cracking the code" can be approached. For example, there are materials available which stress modified alphabets, diacritical marking systems, regular spellings, color codes, and compilations of phonic rules. There are many systems vying for the allegiance of anyone who is inclined toward partisanship. It is important to keep in mind that all of these newer methods-materials for beginning reading have a strong phonics emphasis. In some cases this factor has been ignored, but it cannot be ignored when one attempts to evaluate comparative studies. One cannot fall back on labels and names which have become attached to materials and instructional approaches.

In order to focus on the issue, research which purports to compare the efficacy of i.t.a. (augmented alphabet) and the traditional English alphabet in beginning reading might be examined. Studies thus far reported have failed to present any conclusive evidence as to the merits of i.t.a. simply because all programs which use i.t.a. also include a strong emphasis on phonics or letter-sound analysis. Phonics emphasis is an integral part of i.t.a. instruction.

We know that phonics emphasis is a significant factor in reading achievement during the period of beginning instruction. Thus, any study which purported to compare the relative merits of the i.t.a. and traditional alphabets in beginning reading would of necessity have to keep phonics instruction comparable in both treatment groups.

Recent data tend to support the hypothesis that phonics instruction has played a role in studies which purportedly compared i.t.a. and the traditional alphabet. For example, Tanyzer and Alpert (*14*) compared three instructional approaches—i.t.a., Lippincott basal, and Scott, Foresman basal, the latter two utilizing the traditional alphabet. Both the i.t.a. and Lippincott approaches include considerable letter-sound analysis, and there were no significant differences in achievement between pupils taught by these approaches on word reading, paragraph meaning, and word study skills of the Stanford Achievement Test. (The Lippincott materials proved significantly superior to i.t.a. on vocabulary and spelling.) However, both of these approaches resulted in significantly higher first grade reading achievement than was registered by pupils taught by the Scott, Foresman materials, which in grade one include considerably less phonics instruction than either of the other two approaches.

Hayes and Nemeth (*6*) compared four instructional approaches: 1) i.t.a., 2) Lippincott basal, 3) Scott, Foresman basal, and 4) Scott, Foresman basal and *Phonics and Word Power*. Again, no significant differences were found between i.t.a. and the Lippincott materials, while *both* were superior on word reading to the Scott, Foresman basals used alone. When the Scott, Foresman materials were supplemented by *Phonics and Word Power*, no significant differences were found on the subtest. No significant differences between any of the materials were found on paragraph meaning. On word study skills, no significant differences were found between i.t.a. Lippincott, and Scott, Foresman supplemented by *Phonics and Word Power*, while each of these was significantly superior to Scott, Foresman basals alone.

Due to limitations of space it is impossible to include a detailed review of all the popular approaches to cracking the code. Nevertheless, since linguistics and reading at the moment are tied together in much current discussion, it might be well to explore the relationship of these two fields.

The term "linguistic method" involves a gratuitous use of the term "linguistic." While every linguist is entitled to hypothesize as to how reading should be taught, there is nothing in the body of linguistic science which relates to the issue of *how children learn to read.* For example, there are no linguistic principles which indicate that pictures should be omitted from reading instruction materials. When a linguist advocates the deletion of pictures from instructional materials, he cannot do so on linguistic grounds. His position is an a priori pedagogical decision totally unrelated to linguistic science.

Neither can the science of linguistics be invoked in support of "regular spellings" (fat, cats, bat, at, rats) as the way to approach beginning reading. The use of words enjoying regular spellings is in essence a code cracking approach to beginning reading. While its success depends *entirely* on pupil perception of letter-sound relationships, presently available materials religiously shy away from teaching these relationships.

The proponents of this approach invariably attack phonics instruction, primarily because of a misconception about present-day phonics instruction which they decline to relinquish. That misconception is that phonics instruction isolates the sound of individual letters. Within the framework of this notion the word *bad* would be taught as a three-syllable word (buh-ah-duh). To elect to live with such a concept of present-day phonics instruction is bad, with a capital Buh.

While it is correct to state that at present there are no linguistic methods for teaching reading, it is also true that there are no nonlinguistic methods available. The designers of beginning reading materials may, however, for pedagogical reasons elect to use different emphases:

> Look Mother, look, look.
> Can Nan fan Dan?
> Nat is a fat cat.
> Pud and Zip jump. Jump, Pud.
> Jump, Zip. Jump. Jump.

Each of the above examples of language usage is accommodated within the structure of English. Each can be defended or attacked on a number of fronts. However, it cannot be said that one example is more or less linguistically oriented than any other. A charge that might be sustained against all of them is that they do not closely parallel the language usage of children who are learning to read.

The last issue is that of meaning, or the "set" which learners develop as a result of beginning reading instruction. It is likely that this issue is highly significant, at least for those learners who develop an inadequate set. Questions which might help to put the problem in proper focus are

1. What is the optimum amount of letter-analysis in beginning reading? Can a child learn to over-rely on letter analysis?
2. What is the right combination of emphasis on cracking the code and making beginning reading meaningful?
3. Does the teaching of letter-sound analysis (sounding out "words") inhibit children from grasping the "melody of language"? More specifically, what is the best method for concommitant teaching of word-recognition skills and sentence intonation patterns?

In response to these questions, it seems quite logical that one could start from the premises: 1) that learning phonic skills is absolutely essential for a child to become an independent reader and 2) that a child, to his detriment, can learn to over-rely on this skill in reading. Neither of these premises can be ignored by anyone who has worked extensively with a number of impaired readers. It is possible that two impaired readers, one who needs to learn letter-sound relationships and one who over-relies on sounding letters, may come from the same classroom.

Recently, there has been considerable discussion of the importance of intonation in reading (recreating the melody of spoken language). LeFevre and others stress that the basic "unit" in both speech and reading is the sentence. To the best of my knowledge there are not and cannot be any serious reservations in regard to this concept. On the other hand, there is no evidence that beginning readers can start the reading process by reading printed sentences as *perception units*. Within the framework of our present knowledge about how children learn to read, it would seem that reading instruction must search for the right combination of emphasis on word-recognition and "sentence grasping." LeFevre (*8*) states, "The way the child is taught to perceive printed English will strongly influence the way he actually perceives it. If he is taught to sound and perceive single words, he may do just that and never do anything more. In short, he may become a reading cripple calling single words or calling groups of words with a sentence intonation on each word or group."

Once the code is cracked it must be used unconsciously. The code must absolutely be subordinated to the melody of the language. But if the code is not solved, it is impossible for a child to become a facile reader. If there are segments of printed sentences which are not properly decoded, then it is impossible to arrive at the melody of language which that total printed sentence represents. Every sentence is a prisoner of the structure of the language. The melody of each sentence depends on instant recognition of words, plus instant recognition of their relationship to other words, plus an instant application of proper stress, pitch, and pause. Thus, perhaps it is not just a flight into rhetoric to reaffirm that learning to read is a very complicated symbolic process.

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Reactions to Applying the Linguistics of Sounds in Words

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My comments will focus briefly on 1) the history of "phonetic" systems, 2) some assumptions of on-sound—one-letter systems, and 3) the confusion of a reading method with the art of teaching.

Unifon's forty-character alphabet is one of a series of attempts to develop a "phonetic" alphabet in which each symbol represents only one sound, and the same sound is represented by only one symbol. In 1570 John Hart used a rather consistent "phonetic" alphabet, as did Charles Butler in 1634. Others in the sixteenth century (such as Smith, Bullokar, Coote), in the seventeenth (such as Gill and Wilkins), in the eighteenth (such as Ben Franklin), in the nineteenth (such as Ellis and Pitman), and in the twentieth (such as i.t.a.) have aimed at consistency between sound and symbol. The efforts of Unifon and other "phonetic" systems to present a sound-symbol consistency to aid children in reading is a laudable one. Consistency is a desirable medium for learning. Unifon, obviously, is not a new attempt at presenting a consistent medium for learning how to read.

Some of the assumptions of such "phonetic" alphabets are *a*) consistency is the prime requirement as a medium for children to learn to read; *b*) children can thereby soon be exposed to "interesting" reading; *c*) all children use the same sounds, meanings, and syntax; *d*) there is little consistency, order, or pattern in our present alphabetic system; *e*) English spelling should and can be maintained as a single-sound—single-letter situation rather than a sound-pattern—spelling-pattern one; and *f*) problems will be negligible for all children in the transfer from the new "phonetic" system to the traditional alphabetic one in reading and writing.

This paper will merely point to these assumptions, not discuss them. Nevertheless, it should be pointed out that dialects—sounds, meanings, syntax—are variant. It's an assumption that people speak in the manner indicated by squiggles on a page. I'm not saying that these new "phonetic" systems won't work; I *am* saying that teachers, if they are to be consistent with a new system such as Unifon, should spend their time teaching the students to speak the way each symbol says the sound should be uttered, a formidable task indeed. Without that teaching, what happens to the consistency intended by the new system?

I am reminded not only about those whose syntax includes "I knows him; he know me," or "Ah ain' dun nuff'n," but also of the Midwest pupil who asked the teacher how to spell /ræt/. "Why, R-A-T," the teacher replied. "Nah," said the youngster, "nah dat /ræt/; ah mean /ræt/lak/ræt/ now."

It would seem that Dr. Ratz confuses not only a "phonetic" system that is a form of print with a method of teaching reading, but also a method of teaching reading with the art of teaching. She deplores not only the textbook but also the teacher's guide and workbook, labeling them as an "interest-eating dragon" and "its monstrous offspring." Does she not confuse use with misuse and abuse? She substitutes these items for those she condemns: *a*) the presentation of a new alphabet of forty symbols; *b*) the presentation of that alphabet as a secret code; *c*) the talking, writing, and Buildabook of the children themselves; *d*) learning as fun and joy; *e*) "A Design for Teaching Reading" that is "the most imperceptible sketching;" and *f*) the love, interest, inventiveness and creativity of the teacher.

Many of these items can be part of any reading program, regardless of which code or system is used. Her design for teaching reading, being so imperceptible, seems not a design at all. Such imperceptibility requires a teacher who is an artist in teaching. What we are left with is not a reading method; rather it's a new form of print that calls for the teaching artist to create and frame. Dr. Ratz has done an admirable job of describing the kind of teacher who is such an artist in teaching children to read. She describes a teacher who not only is well-informed, having "read far and wide about the process of reading instruction," and having "accepted some ideas and discarded others," but also one who is child-centered, who does all the things involved in making teaching a creative act, and who has, above all, heart with her art.

No reading system of and by itself does the job. Some systems do the job better than others. But all systems need the teacher who has both art and heart. I am sure Dr. Ratz is such a teacher. The limited evidence of the success of Unifon as presented in her address needs no comment. There is insufficient information about the research to discuss it. But one thing comes through loudly and clearly—Dr. Ratz must be an artful, heartfull teacher. I'd love to have her teach my own little girl how to read, for whether Dr. Ratz used Unifon or Ratzifon, I'm sure she'd teach my little girl—and thousands like her—how to read.

Reactions to Applying the Linguistics of Sounds in Words

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A vexatious difficulty of any discussion of research or method in reading instruction is the misfortune that there is no such thing as a generally accepted theory of reading and reading instruction. Lacking a rigorous and accepted theory, we are barging ahead in reading, a ship without a rudder. Professionals in reading do proceed on certain assumptions about language and about the relationship of print to speech; but these assumptions, in psycholinguistic terms, are often quite simplistic; sometimes they are unstated, or even unconscious. There can be no truly professional discussion of reading theory based on these materials.

Preventable reading failures will not in fact be prevented unless the profession faces up to the necessity of sound theory as a framework for research and practice—explicit theory, comparable to theories in other disciplines, such as acting and interpretation, linguistics, mathematics, music, the physical sciences, and psychology. Nowadays physical sports have developed respectable theories. A theory to deserve the name of reading theory must be explicitly stated, rigorous, and consistent with knowledge in the impinging disciplines; it is not enough to subscribe to a vague eclectic or multilinear theory, which may simply be a covert admission of having no theory. In my discussion I shall be looking for underlying theory.

Dr. Heilman's paper has three main parts: 1) a summary of research findings concerning phonics in beginning reading, 2) a short quarrel with the use of the term "linguistic method" as applied to reading instruction, and 3) a brief discussion of possible relationships among meaning, phonics, and sentence intonation patterns. A sentence from his opening paragraph summarizes his position: "Research on first grade reading instruction leaves little room for doubt that pupils exposed to systematic instruction in letter-sound relationships score higher on 'reading achievement' tests at the end of grade one than do pupils who receive little or no such instruction."

Critical terms are undefined. In view of widely varying practices and materials, "systematic instruction" is not necessarily clear; no examples are given except implicitly by reference to programs by publishers' names (but not all programs). Also, in view of basic differences of information and opinion between the Lippincott program and i.t.a. (which i.t.a. materials?), "letter-sound relationships" may mean quite different things. These relationships are specific, not general.

Dr. Heilman himself seems to suggest by his use of quotation marks to set off "reading achievement" that the term requires definition; later he indicates that in at least two studies it means scores made on three tests: Word Reading, Paragraph Meaning, and Word Study Skills. While these tests are not described, it is clear that Word Reading and Word Study Skills are phonics tests. Not surprisingly, students who have received "systematic instruction in letter-sound relationships" do better on these two tests than students who have not, a fairly obvious conclusion?

On the other hand, pupils who do well on these two phonics tests perform no better on Paragraph Meaning than pupils who have not had systematic phonics instruction. What then is the meaning of the term *reading* in a test credited with measuring *reading ability*? Reading seems to be the ability not to score well on Paragraph Meaning, but to score well in Word Reading and Word Study Skills. In so many words, children taught phonics tend to learn phonics and do well on phonics tests, but they do no better on comprehension than students who have had no phonics instruction. This is circular reasoning and circular procedure, like a pup chasing its tail.

Dr. Heilman states that the term "linguistic method" involves a gratuitious use of the term "linguistic." He says "there is nothing in the body of linguistic science which relates to the issue of *how children learn to read*." It so happens, however, that all the published "linguistic" reading programs engage heavily in systematic instruction in letter-sound relationships. The very expression, "letter-sound relationships," assumes that letters and sounds are two quite different categories of symbols; it further assumes that somebody knows what the relationships are. The sounds of language are among the basic concerns of linguistics, which is simply the modern study of language; the history and development of alphabets is another general topic in linguistics. Where would one go for accurate information about the sounds of language, the alphabet, and the alphabetical principle if not to linguistics?

The smallest structural sound units of language are the segmental phonemes; the essentials of the Trager-Smith description and notation of English phonemes have been generally accepted for about fifteen years. The visual symbols we use to represent English phonemes, letters and groups of letters from the Roman alphabet, are graphemes. Both terms, phoneme and grapheme, are precise linguistic terms. If instruction in letter-sound relationships is of basic importance in beginning reading instruction, linguistic science offers precise data directly related to this issue. In my opinion, there is vastly more than phoneme-grapheme correspondence in the linguistic analysis of English that is applicable to reading instruction. Incidentally, when linguists object to the use of pictures in beginning reading, they usually do so because they believe that the central problem in learning to read is to interpret the print, and that pictures may confuse the issue.

Since reading is a language-related process, reading instruction should incorporate everything pertinent that we know about language, not just phoneme-grapheme correspondences; rhythm and syntax, certainly. Stress-timed rhythm is fundamental to the sound of English sentences; sentence patterns (or kernels), their varients and transforms are the basic meaning-bearing units of printed English. English rhythm can be and should be incorporated as an inductive element in reading instruction from the very first. Sentence analysis and sentence perception also can and should be taught as a formal element in a diversified reading program.

If it is true that no research supports these statements, it is equally true that no research disproves them. Moreover, there is ample theoretical basis to support them.

The interesting question is, why is there no research on matters of such potential value to reading instruction? These suggestions have been available to the profession in the form of one book and a score of articles published during the past seven years. The unfortunate answer to this question is that what little we have of reading theory is too impoverished to encompass these elements. Moreover, there is no compelling proof that phonics instruction contributes as much to reading comprehension as is frequently claimed; this is an obvious conclusion from certain parts of Dr. Heilman's own presentation.

Just as long as we do not have a rigorous theory of reading and reading instruction, the widespread belief in phonics is simply an unexamined article of faith.

UNIFON is the name of John Malone's forty-character alphabet for beginning reading; it is meant to be a truly consistent one-character-for-one-sound representation of English. In this intent it resembles World English ("New Spelling"), the Initial Teaching Alphabet, and in fact all new alphabets designed to regularize spelling as a means of teaching beginning reading.

Of all such alphabets, only i.t.a. makes a point of preserving the contours of traditional orthography, at least in the upper halves of the characters, so as to come remarkably close to reproducing the visible contour of the running line of traditional print —or more accurately, the upper half of it, which is the decisive half. This marked visual feature of i.t.a. eases the transition to reading traditional orthography. The solution of the problem of two sets of letters for upper and lower case has been attempted by using only lower case shapes and by enlarging them where capitals are used in traditional print.

The all-upper-case Unifon, on the contrary, includes a number of completely different characters; some resemble Greek or Russian letters, and others are mirror images of our Roman letters, both reversals and inversions. Not only is there no visual preparation for transition to regular print, but it would seem that some of these characters might present visual difficulties. Unifon reminds me of Dr. Mildred Letton Wittick's Confusabet, which was deliberately designed to show adults some of the child's difficulty in mastering the Roman alphabet as a prerequisite to beginning to learn to read.

So far as theory goes, Dr. Ratz is understandably disillusioned with attempts to teach beginning reading by formulating verbal rules for letter-sound relationships and requiring the children to apply them deductively, and with "long lists of words and syllables, memorization, drill, and stories that have little value beyond the dubious one of using simple words and syllables that follow the rules." Her sensitive descriptions of the frustrations of children trying to learn to read in this way are touching and persuasive. This part of her work is humane and sympathetic.

Citing no less a philosopher than John Locke, Dr. Ratz advocates, as I do, that the children's natural spirit of spontaneous play should be preserved in their learning of the skills of literacy. With respect to Unifon, Dr. Ratz believes that this aim can be realized by presenting it as a secret code for both reading and writing. While I do not doubt that Unifon has been successful as a means of introducing some children to reading, the evidence in the paper is quite contradictory, and certainly not conclusive in favor of Unifon.

It must be chastening to all of us to realize that there has never been a method of teaching beginning reading that has been a total failure, nor has there ever been one that was a total success. Some children have learned to read by all known beginning reading programs; but some children have also learned to read almost entirely by themselves, using no known methods, and possibly in spite of methods and material. Anyone who is interested in reading improvement must be concerned with the children who do not learn to read by any known method so far devised. Here is the challenge.

This is not the occasion to discuss the intricacies of phonetics, phonemics, the alphabetical principle, and reading; in any case, competent discussions have existed for many years and are readily available in print. But we should note that all these alphabets that presume to use a single character for a single sound simply ignore the great variety of English dialects the world over that do not by any manner of means sound alike. For example i.t.a. is a deliberate representation of Received Standard British, which is far from universal in Great Britain and is simply not spoken as a native dialect anywhere in North America. Presumably Unifon represents the sounds of John Malone as an individual, and probably also as a speaker of the Upper Midland dialect of the United States. Unifon cannot represent—in terms of one character for one sound—all the various dialects spoken by all the English-speaking people of the world.

The only alphabet that explicitly recognizes the necessity of representing English phonemes in dialects around the world is the phonemic alphabet first presented by Trager and Smith in *An Outline of English Structure,* and treated in dozens of textbooks in English linguistics. Reading instruction cannot come to terms either with itself or with the basic facts of English speech and print until the structural phonemic principle is firmly grasped by professionals in reading. This is a bare minimum requirement; it is not at all clear that English spelling is the primary and basic problem of learning to read printed English with comprehension. This is a commonplace, unquestioned assumption, but there is simply no research that even opens the question, much less settles it. It is a simplistic article of faith.

USING i.t.a. IN BEGINNING READING
(UNITED STATES)

The Nature and Functions of i.t.a. in Beginning Reading

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THE QUESTION of how best to teach children to read and write English has produced much controversy over the years. Out of contemporary controversy have come many proposals, each advocating different approaches and programs, each challenging conventional materials, methods, and practices. One of the most unique of these innovations, and one that is generating much interest in educational circles, is the Initial Teaching Alphabet (i.t.a.).

At this point it seems almost superfluous to describe this new alphabet. It is so widely used in the United States, England, Canada, Australia, New Zealand—in other words, throughout the English-speaking world—that a surprising number of people, in and outside the profession, are familiar with Sir James Pitman's alphabet and the principles on which it is based.

Nature of i.t.a

Briefly, i.t.a. is a forty-four-character alphabet using our conventional lower-case alphabet (excluding *q* and *x*) plus a number of augmentations. Its purpose is quite simple: it is designed to make the decoding aspects of the learning-to-read process simpler and more rational by regularizing the symbol-to-sound relationship. Its goal is to assist the beginner in acquiring the skills necessary to read conventional print proficiently. It is distinguished from other phonemically- or phonetically-consistent English alphabets in that it was clearly and originally conceived by its inventor to be a *transitional* learning alphabet, to be used only during the beginning stages of learning to read and write English. It is to be discarded once fluency is achieved, the time when the learner meets our traditional orthography (t.o.) at a level of linguistic competency that permits him to deal with it efficiently and meaningfully. By using twenty-four of our twenty-six lower-case Roman characters, adding fourteen additional symbols which are digraphic combinations of familiar characters, and by adding only a few specialized symbols, Pitman has reiterated the relationship between i.t.a. and traditional orthography.

Pitman has done more than produce a set of alphabetic symbols. He has also established a number of spelling rules which are an integral part of his conception. In other words, the i.t.a. characters *and* the spellings of words in i.t.a. were created by Pitman to correlate very closely with conventional orthography in order to facilitate transition at a later stage. Pitman developed the i.t.a. medium to meet head-on the orthographic problems created by what Coleridge called a hundred and fifty years ago "our lying alphabet." Why our "lying" alphabet? Because the English alphabet contains too few letters to encode the phonemes of English speech on a one-to-one basis. In addition, our capricious English spelling contributes to the disrelationship between the graphic representations of words and their speech equivalents.

A few examples should illustrate the disparity between sounds and symbols in English orthography:

1. The letter *s* represents different phonemes in *bus, his, sure, treasure.* The combination of letters *one* signifies a different sound in each of the following words: *one, done, bone, gone.*
2. The same phoneme can be represented by a variety of characters or graphemic units; e.g., *right, white, buy, by, I, eye, choir, aisle, aye, island*, etc.
3. Since our alphabet does not provide individual symbols for some of the phonemes of English, complex combinations of letters must be used to represent these sounds; for example, the initial sound in *show, cheese, the, thick, oil, awful*, etc.
4. Spelling in conventional orthography does not always consistently represent the left-to-right sequence of our phonemes: *kite, lake, mete, like, same*, etc.

The rationale underlying i.t.a. is that the easiest and most sensible approach to learning to read is to start with a simplified and reliable alphabetic medium which approximates t.o. It is Pitman's contention that i.t.a. reduces, and to a large extent eliminates, a number of the unnecessary orthographic difficulties of conventional print by circumventing them in the initial learning stages. When the learner has progressed to the point at which he can read fluently and with adequate comprehension, he transfers his skills to reading in conventional print.

It was essential that the designer strike a delicate balance between two conflicting considerations: the need for a simple and consistent alphabet that would serve the learner effectively during the initial learning period, and the necessity for visual compatibility with word forms in conventional orthography (with all their inconsistencies) to make transition as effortless as possible. The single most important characteristic of i.t.a.'s design is, therefore, that it represents a carefully-weighed compromise between a perfect phonemic alphabet (which i.t.a. is not) and the traditional alphabet and its spelling. Sir James' selection of the number and forms of augmentations required to design a simple and effective reading alphabet and his choice of spelling principles were formulated in the light of his analysis of the phoneme-grapheme relationships of our conventional graphic system. Unlike traditional orthography, with its frequently misleading and variable print-sound relationships, each of the forty-four i.t.a. characters carries a single consistent sound value, and the alphabet contains enough characters to represent the significant phonemes of spoken English. A comprehensive linguistic analysis of i.t.a. is not appropriate here; I understand that a forthcoming book by Sir James Pitman will provide a complete review of this and related issues. However, certain misconceptions about i.t.a. should be dealt with:

i.t.a. is not a *phonetic* alphabet.
i.t.a. is not a *pure* phonemic alphabet.
i.t.a. is not a *method* for teaching reading.
i.t.a. is not an insidious *attempt at spelling reform.*

As its name implies, i.t.a. is a learning alphabet, and its spellings are designed to rationalize the decoding process at the same time that it provides a firm foundation for easy transition to the orthography the child will use for the rest of his life.

The functions of i.t.a. in beginning reading

What has been most confusing in any discussion of i.t.a. is the common failure to distinguish between the alphabet as an orthographic medium and the methodology employing it to teach reading. The fact remains that i.t.a. is a medium. Like our orthodox alphabet and orthography, it can be used well or badly, sensibly or not, with or without good teaching.

In beginning reading, i.t.a. will be used according to the perceptions of the user. The teacher has the same variety of options as in teaching reading with the conventional alphabet. In other words, any method or combination of methods proven successful in teaching reading with the orthodox alphabet can be used with i.t.a.

One option is simply to transliterate any basal reading program, utilizing the new alphabet for whatever benefits accrue. Indeed, perhaps because of the need for comparability in an experimental situation, this is what was done originally in Great Britain. The children in the experimental i.t.a. classes used the *Janet and John* basal reading series, a British version of our familiar *Alice and Jerry* readers. A number of British publishers have produced i.t.a. reading programs in this way; that is, the materials are simply transliterations of their books originally published in traditional orthography, and the methodology and the rationale are, inevitably, the same as those for the original editions. At least one leading American publisher has also chosen this option. The question that arises about these "instant" i.t.a. books (books that are created simply by changing the print) is whether these books exploit the benefits of i.t.a. since their rationale was based on the requirements of traditional orthography. Although, to quote the British *Times Educational Supplement* (February 3, 1967), "it is not surprising . . . that most publications in i.t.a. are reprints of material issued in T.O."; one may note, along with the *Times Educational Supplement,* that "if i.t.a. really makes a difference then the way has been cleared to design a more exhilarating approach to early reading."

A second option is to produce new materials which follow the precepts established for traditional basal reading programs. According to the *Times Educational Supplement* (3),

> The Downing Readers were the first infant readers specifically written for i.t.a. In design and form they proved to be indistinguishable from standard T.O. readers. But they were written when i.t.a. was in its infancy. There had not been time to work out a new teaching approach.

A third option is to develop i.t.a. instructional materials for beginning reading which attempt to utilize the advantages of the new medium. What is done is dependent upon one's perceptions of what those advantages are, upon the philosophy and personal opinions regarding the teaching of reading, on the children themselves, and, of course, on the use of the many existing studies of learning theory and child development and of research in reading. One example of such a program, developed by Albert J. Mazurkiewicz and the writer, is the Early-to-Read i.t.a. Program. It is presently being used in most of the first grade classes in this country in which reading is being taught with the initial teaching alphabet. It is, obviously, a product of our own perceptions; we wished to produce a reading program which exploited the full potential of i.t.a. Our fundamental assumption was that with the change to a simplified, more rational medium, it was essential to review our previous assumptions about the teaching of beginning reading in general, and our assumptions about methods of teaching word recognition, about content, organization, sequence, and reading levels in particular. Finally, we felt that there was a need to consider which training procedures and practices would best prepare the way to transition in reading, writing, and spelling in conventional orthography.

Since the British experiment with i.t.a. replicated conventional approaches with instructional materials originally intended to be used with the orthodox alphabet, we could gain little information and guidance from it. From the very beginning, the British research pointed to the fact that the orthodox alphabet and conventional orthography are a source of difficulty in the earliest stages of learning to read and write English, and that a more consistent, rational medium, such as i.t.a., significantly reduces the learner's burden and results in early independence in reading. This was our basis for selecting i.t.a. in the first place. These hypotheses have now been validated, as Downing has so conclusively reported (*2*). But i.t.a. was selected as a successful medium which was still to be employed, hopefully in an optimal way.

An analysis of the Early-to-Read i.t.a. Program Revised (*5*), the first edition of which was introduced in this country in 1963, shows that it contains a number of discrete features which differentiate it from most typical basal series in the nature of its initial readiness activities and experiences in meaningful reading and writing; in its word recognition program—its organization, sequence, and timing; in the control exercised over the language factor with respect to vocabulary load and frequency of word repetition; in the nature of the content and readability levels of the selections in the readers; and in the presentation of independent reading and writing activities.

Initial reading and writing activities. Early reading and writing activities are designed to assist the child to acquire basic decoding and encoding skills. These should enable him to engage in meaningful reading from the very outset of reading instruction and to develop early independence in reading and writing.

The initial reading and writing activities are of two types: First, those intended to teach the symbol-to-sound associations in order to help the child apply this knowledge in word building and in word identification. The second type stresses a language-experience approach, whereby children read stories composed and dictated by them as well as those written by the teacher. Picture stories are used to stimulate experience-story work that provides the child with a written record of his own idiomatic use of language.

At the very outset of formal reading instruction, emphasis on learning the phoneme-grapheme correspondences of i.t.a. is coordinated with an experience story approach. After pupils have gained considerable facility in reading experience stories and have learned the sound-symbol associations for seven of the i.t.a. characters, charts are used to introduce gradually the twenty-two-word vocabulary of the first paperback reader. These words are taught through a visual-auditory, or look-say, procedure. The advantage of i.t.a. in whole-word approach is that the different visual patterns for the same word which occur in traditional orthography are eliminated. When a word is formed from characters already taught, the child is encouraged and expected to work out its pronunciation on his own.

Children are taught phonic analysis through intensive training in auditory and visual discrimination skills. As children develop the visual and auditory association of a character, they learn to write it and reproduce it from memory. Writing serves as an additional avenue of learning and helps the child to form a strong visual-auditory bond between the sound which the character represents and its written form. The order of presentation of the characters is based on a study of the frequency of sound occurrence in story material written for children and on Godfrey Dewey's (*1*) study of relative frequency of English speech sounds. Pupils are taught to use an analytical procedure to unlock the pronunciation of new words. This approach emphasizes the analysis and synthesis of the characters of a word as the principal method of word identification. Phonics instruction is thus a direct outgrowth of a meaningful reading activity, with decoding skills treated as a part of the larger issue—the gaining of meaning. Emphasis on word analysis and sound synthesis activities helps the child to develop independence in word identification and independence in reading.

The task of the first phase of the Early-to-Read program thus becomes one of systematically developing the basic perceptual skills in reading that enable the child to link each character with its appropriate sound and to utilize this knowledge in unlocking the pronunciation of new words. Thus he can engage in independent reading at an early stage. When the child completes two more paperback readers and two cloth-bound ones, he has learned the forty-four i.t.a. characters as well as those analysis and synthesis skills which will permit him to identify any i.t.a. word in his spoken and listening vocabulary reliably and effectively.

While the development of basic phonic skills here requires less than a year, the complex and elaborate phonics instruction required in most t.o. basal series often must be spread over three years of instruction. Also from the very beginning, since i.t.a.

simplifies decoding, strict vocabulary control and frequent repetition of words are not as necessary as they are in a conventional t.o. program. Thus, the program introduces a significantly greater number of words, three to four times greater than that found in conventional first grade basal reading programs. In addition to the separate phonic elements that are taught, virtually every basal reading program teaches a number of phonic generalizations. The child taught in i.t.a. does not need to learn multiple word analysis skills or phonic generalizations during the initial learning period.

Developing and extending skills. With the development of independent reading in the child's next two readers, fluency is stressed, and the decoding and comprehension skills developed in the early books are maintained and extended. At this point in the program, structural analysis skills, consisting of compound words, contractions, possessives, derived forms, inflectional endings, comparatives, and beginning syllabication skills are developed. Preparation for transition is made by introducing the concept of long and short vowels.

Since the i.t.a. medium affords the child the opportunity to express his thoughts in writing more easily and spontaneously, written composition work is stressed throughout the program, and it inevitably reinforces reading skills development in a positive and significant way. When t.o. is used as the initial learning medium, it appears that conventional spelling thwarts the child's early attempts at writing, and insecurity with his ability to spell is a significant factor in retarding early desire and independence in writing.

Transition in reading, writing and spelling. The third phase is designed to develop fluency and comprehension, and to move the child into the conventional alphabet. The instructional program concentrates on traditional orthography and prepares the child for making a formal transition to t.o. by gradually introducing words in t.o. and replacing i.t.a. spellings with conventional spellings. Virtually all of the last reader in the series is written in conventional orthography. By now, the child has formally made the transition from i.t.a. to t.o.

The transition process is an area in which relatively little controlled and systematic research has been conducted. An unpublished study by Tanyzer and Alpert (4) investigated the effect of transition upon the child's reading level in traditional orthography to determine whether children of different levels of intelligence maintain their i.t.a. reading skill in the orthodox alphabet when they transfer from i.t.a. to t.o. Transition was operationally defined as the point at which the child completed the last reader of the Early-to-Read series. Alternate forms of the Stanford Achievement Test, one printed in conventional spelling and the other transliterated into i.t.a., were administered to a sample of 104 pupils at the time transition was made. To summarize the results, it was found that the children generally maintained their i.t.a. reading skill in conventional orthography when the formal transition was made. There was no loss, or relatively little loss of practical significance, in Word Meaning, Paragraph Meaning, and Spelling. Also, regardless of the time at which the child made the transition—near the end of the first grade or sometime during the second grade year—or of level of intelligence, children generally achieved a comparable reading level in both i.t.a. and t.o., although the time of transition was usually later for the low IQ (less than or equal to 100) children. Only on the Word Study Skills subtest was the i.t.a. level generally higher than the t.o. level, regardless of the intelligence level or time at which transition was made. This finding suggests that the i.t.a. medium is easier than the orthodox alphabet for learning to decode.

It should be pointed out that the reduced need for repetition and a controlled vocabulary has provided an opportunity for significant changes in content throughout. Thus stories can now be intrinsically interesting, and the children can be introduced to literature rather than to synthetic concoctions which must depend on orthographic circumscriptions. It is likely that the concept of reader level must be modified, since i.t.a. permits reading at an "advanced" level, if level reflects syllabic load, sentence length, unfamilir words, etc. The guiding principle could now be to select stories which expand conceptual horizons as well as verbal ones and approximate more nearly the intellectual and comprehension of capabilities of the child. Reading can become a pleasurable activity from the very beginning.

This program is that most commonly conceived of as "i.t.a." in the United States. The confusion between method and medium, however, seems inescapable, no matter how often one attempts to clarify it. Much of the research in the United States often fails to note the fact that the i.t.a. is used in a context, and that the context is always relevant.

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Research Findings Regarding the Use of i.t.a.

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ANYONE attempting to critically review and summarize a series of research studies in the field of education, no matter what the topic, is plagued by a variety of problems. Men much wiser than I have used many pages of print to discuss these problems and I shall not belabor the issue here. However, I would like to point out that these problems do seem to be of two main types. When a serious question is raised about some aspect of a research study, it is very difficult, if not impossible, to determine whether the problem rests with the study itself or with the inadequate reporting of the study. It would appear to me that the various research studies concerned with the Initial Teaching Alphabet are no better or worse in these regards than any other group of investigations within the field of education.

A variety of possible ways to organize this report were open. The plan decided upon as being most coherent divides the task into three parts: first, a brief summary of the procedures and findings of major research studies conducted in this country which have in some way involved the use of i.t.a. in beginning reading instruction; then a discussion of various criticisms that have been directed toward these studies and toward i.t.a. in general; and finally, an attempt to summarize our present state of knowledge concerning this new printing medium along with some suggested future courses of action with respect to i.t.a.

Review of the research studies

The following discussion and critique of i.t.a. research studies is not intended as an exhaustive review. There are many schools in this country which have used i.t.a. in beginning reading who have either not published their results at all or have given their reports only limited circulation. The studies reviewed here are those that have received the most attention and have been included in major professional publications. Because of the purpose of this particular paper, those reports which deal with i.t.a.

and its use with various types of exceptional children and adults are not included in this review.

Within the limits of this paper it is not possible to present each and every finding from the studies reviewed. For each individual study only those findings specifically involving i.t.a. will be mentioned. Some of the studies involved more than one t.o. approach, and those findings pertaining to a comparison of one t.o. approach with another will not be discussed here.

The U. S. Office of Education first grade studies

Five of the twenty-seven first grade studies sponsored by the U.S. Office of Education dealt in some way with the use of i.t.a. All of these studies were done in the 1964-65 school year, and every attempt was made to exert similar controls on all the studies. All the studies used some of the same pre-tests and post-tests, and all were conducted for approximately 140 school days.

One of the first grade studies involving i.t.a. was conducted in Oakland County, Michigan, and was reported by Hahn (*7*). Approximately nine hundred students in thirty-six different first grade classrooms were subjects in an experiment in which three different "approaches" were compared: 1) various basal reading approaches with the materials printed in t.o., 2) a language-experience approach in t.o. supplemented by certain phonics materials, and 3) a modified language-experience approach using i.t.a. as the printing medium.

In terms of silent reading achievement on a t.o. printed form of the Stanford Achievement Test administered in May, no significant differences were found on the word study skills and paragraph meaning subtests. Both the i.t.a. and t.o. language-experience pupils performed significantly better on the word meaning subtest than did the t.o. basal reading group.

Small random samples of pupils from each of the three "approaches" were administered various t.o printed oral reading tests. The i.t.a. pupils performed significantly better than did the other groups on two of three word lists.

With t.o. spellings being required, Hahn found that both the t.o. language-experience and t.o. basal reading groups performed significantly better than the i.t.a. group on the spelling subtest of the Stanford. In terms of creative writing, it was noted that both the i.t.a. and t.o. language-experience groups did considerable writing, but the investigator claimed that the creative writing products defied analysis.

In discussing those findings from his study pertaining to i.t.a., Hahn cautioned that final conclusions must be postponed until such time as all the i.t.a. youngsters had completed transfer to the t.o. medium. At the time of testing in May of the first grade, approximately 80 percent of the group had made formal transfer.

Another of the first grade studies involving i.t.a. was conducted by Fry in twenty-one first grade classrooms in three suburban school districts of central New Jersey (5). The three "approaches" to beginning reading compared in this study were 1) the Allyn and Bacon basal reading approach with materials printed in t.o., 2) the Allyn and Bacon materials specially reproduced with a newly developed diacritical marking system used, and 3) the Early-to-Read i.t.a. materials prepared by Mazurkiewicz and Tanyzer.

No significant differences were found on any of the silent reading subtests of the t.o. printed form of the Stanford Achievement Test administered at the end of the first grade. The i.t.a. pupils were found to have performed significantly better than the other two groups on one of the t.o. printed oral reading word lists.

When only t.o. spellings were accepted, the i.t.a. group was found to be significantly inferior to the other groups. In terms of creative writing, the i.t.a. pupils wrote longer stories but were found to be inferior to the other two groups on a writing mechanics ratio involving punctuation and indentation.

Fry also cautioned against making any final conclusions until transfer had been completed for both special alphabet groups. He did indicate that a majority of both special groups were reading t.o. materials at their level.

Hayes reported the third first grade study pertaining to i.t.a. (8). In this study, involving 365 pupils in the New Castle, Pennsylvania, area schools, four "approaches" were compared: 1) the Scott, Foresman basal reading program, 2) the Scott, Foresman basal reading program supplemented by a phonics workbook,

3) the Lippincott basal series with its phonics filmstrips, and 4) the Early-to-Read i.t.a. series.

Hayes reported that generally the i.t.a., Lippincott, and Scott, Foresman plus phonics workbook groups performed significantly better than did the Scott, Foresman group on the t.o. printed subtests of word meaning and word study skills. As with the previous two studies, small samples of students from all four groups were administered various t.o. printed oral reading tests. The results indicated that the i.t.a. and Lippincott pupils performed significantly better than the other two groups on the word lists. In addition, the i.t.a. group performed significantly better than the Lippincott or Scott, Foresman plus phonics workbook groups on the Gilmore Oral Reading Test.

The i.t.a., Lippincott, and Scott, Foresman plus phonics workbook groups were reported to be significantly better spellers. However, it is not clear from the report whether only correct t.o. spellings were considered for the i.t.a. group. No comments were made relative to creative writing.

Further analyses were made by dividing the children into thirds with respect to intelligence test scores. In general, the same patterns of superiority were found at all intelligence levels as had been found for the groups as a whole. It is of interest to note that 26 percent of the i.t.a. children had not transferred at the time of testing in late April.

A fourth i.t.a. first grade study was reported by Tanyzer and Alpert (*17*). In this study involving 643 pupils in three Long Island, New York, school districts, three "approaches" were compared: 1) the Scott, Foresman basal reading program, 2) the Lippincott basal series with considerable phonics instruction, and 3) the Early-to-Read i.t.a. series.

Findings revealed that generally both the i.t.a. and Lippincott pupils achieved significantly higher scores on the t.o. printed tests of word meaning, paragraph meaning, word study skills, and vocabulary than did the Scott, Foresman group. The Lippincott pupils performed significantly better than the i.t.a. group on the Vocabulary test only.

With regard to oral reading, both the i.t.a. and Lippincott pupils were significantly superior to the Scott, Foresman group on three t.o. printed word lists. In addition, the i.t.a. pupils achieved significantly higher scores than the Scott, Foresman group on oral reading accuracy as measured by the Gilmore Oral Reading Test.

Tanyzer and Alpert further reported that both the i.t.a. and Lippincott pupils achieved significantly higher scores on the Spelling subtest, and the Lippincott group scores were significantly higher than those of the i.t.a. group. It is difficult to interpret these findings because it is again not clear whether only correct t.o. spellings were considered for the i.t.a. group. As with the Hayes study, no comments were made relative to creative writing.

The last of the first grade studies involving i.t.a. was conducted in Bethlehem, Pennsylvania, and was reported by Mazurkiewicz (*10*). More controls with regard to teaching methodology were evident in this study than in the four previously discussed. Both the i.t.a. and t.o. classes used a multi-basal plan for materials, and the language-experience approach was emphasized in all classes. Less able t.o. pupils used the American Book Company basal series, while the more able pupils in the t.o. classes used the Row Peterson basals. Less able i.t.a. pupils used the Downing readers, while the more able pupils in the i.t.a. classes used the Early-to-Read series. To balance the introduction of the forty-four symbols in the i.t.a. classes, the forty-four corresponding graphemes were introduced in the same order and in basically the same manner in the t.o. classes.

At the end of the first year, a t.o. printed form of the Stanford Achievement Test was administered to 385 i.t.a. and 345 t.o. pupils. No significant differences were found on the silent reading subtests. However, because of problems in equating the total groups, 118 matched pairs were used in further analyses of the data. Although only 64 of the 118 i.t.a. members of the pairs had made formal transfer, the i.t.a. group was found to have performed significantly better than their t.o. counterparts on the word meaning subtest.

No significant differences were noted between the i.t.a. and t.o. groups on various oral reading tests. When only t.o. spellings were considered correct, the t.o. group performed significantly better than the i.t.a. group.

The original Bethlehem-Lehigh study

The first major study of i.t.a. and beginning reading instruction was initiated in the Bethlehem, Pennsylvania, public schools in 1963. This is one of the few studies from which some evidence has already been presented in the literature regarding the long-range effects of using i.t.a. Various reports of this study written by Mazurkiewicz and Stewart have appeared in professional publications (*9, 11, 12, 15, 16*).

Difficulties were encountered in this study in equating the t.o. and i.t.a. groups. To overcome these difficulties, the matched-pairs technique was used in analyzing the data.

The data analysis revealed that at the end of the first grade, those youngsters who had used the Early-to-Read i.t.a. series performed significantly better on the t.o. printed vocabulary subtest of the California Reading Test than did the pupils in the control group who had used cobasal t.o. materials. In addition, the i.t.a. pupils performed as well as their t.o. counterparts on the reading comprehension subtest. At the end of the second grade, the differences in terms of vocabulary still significantly favored the i.t.a. pupils, and no differences in comprehension were present.

With respect to spelling, the t.o. pupils were found to be significantly ahead of their i.t.a. equivalent pairs at the end of the first grade, but by the end of the second grade the differences in spelling significantly favored the i.t.a. pupils.

Analyses of creative writing samples collected at the end of the second grade revealed that the i.t.a. pupils wrote longer themes and used more multisyllabic words. In addition, the i.t.a. pupils' spelling performance was superior to that of the t.o. pupils on these writing samples. In terms of writing mechanics, there were no significant differences found in the ability to use punctuation correctly, but the t.o. pupils demonstrated superior skill in capitalization.

Two other studies

Two other studies are relevant to this review. Shapiro reported a large study involving over one thousand pupils in the

Cleveland, Ohio, area (*14*). End of year evaluations included the Stanford Achievement Test and the E.R.C. Reading Mastery Test, a test specially constructed for use in the study. Significant differences favoring the i.t.a. pupils were found on the reading Mastery Test and on the Stanford subtests of word meaning, word study skills, paragraph meaning, and spelling. It is difficult to compare these results with other studies because no analysis was made of the particular reading methods or materials used in the various classrooms.

McCracken has also published an interim report of a beginning reading study involving comparisons of i.t.a. and t.o. materials(*13*). Although there was a small number of pupils in both groups, differences at the end of the first year on a t.o. printed form of the Stanford Achievement Test were generally not significant. The i.t.a. group who had used the Early-to-Read materials were found to be significantly ahead of the experimental t.o. group, who had used the Ginn basal reading series, on the Word Meaning subtest. No significant differences in spelling performances were noted.

Criticisms of i.t.a and the i.t.a research

The Initial Teaching Alphabet and those research studies involving i.t.a. have not lacked for severe critics. For example, William B. Gillooly has written a very critical review of the early research studies on i.t.a. conducted in this country and has concluded that there is no clear evidence as to the effectiveness of this new printing medium(*6*).

Gillooly specifically attacked the studies he reviewed as having serious weaknesses in experimental controls. Weaknesses cited included the lack of control of equivalent groups, teacher variables, methods, materials, and the infamous Hawthorne effect.

Gillooly believes that these early studies were conducted with a very low level of control and has stated that there is no need for any further research of that caliber. He does call for longitudinal studies using more and tighter controls so that the good and bad effects of i.t.a. can be objectively evaluated.

A recent article written by E. A. Enstrom was also highly critical of i.t.a. and the research studies conducted with this new medium (*4*). Enstrom seems to feel that claims are being made for i.t.a. that are not borne out by the research evidence. He suggests that the i.t.a. research of the future should be conducted by the skeptical rather than by those with preconceived biases in favor of i.t.a.

A third critic of the i.t.a. research conducted in this country comes from within the ranks of those people vitally concerned with this new medium. John Downing, who has conducted extensive research in England with i.t.a., has been quite harsh in his appraisal of the studies carried on in this country (*1*, *2*, *3*).

Downing feels that the practice of evaluating i.t.a. learners only on tests printed in t.o., as was done in the first grade studies discussed earlier, makes a valid comparison of i.t.a. with t.o. impossible. He has also stated both in speeches and in his professional writings that he feels that the American experiments with i.t.a. have failed to adequately control the content-of-materials variable.

In connection with this latter criticism, Downing feels that i.t.a. in this country is unfortuntely becoming associated with only set of materials and one instructional approach. He has constantly emphasized that i.t.a. is not a method of reading instruction but is a writing system which can be used in connection with any type of teaching methodology.

The present state of knowledge and suggestions for the future

Where does all this leave us? What is our present state of knowledge with regard to i.t.a. as a printing medium in beginning reading instruction? Although it may sound like hedging, I must answer the latter question by saying that it depends on one's interpretations of the research reported up to now.

Considering the research findings at face value, i.t.a. has certainy not suffered in the many possible comparisons made. In fact, there appears to be evidence that the use of i.t.a. as a writing system for beginning reading materials can result in greater gains in the skill of word perception, while not sacrificing any loss of progress in reading comprehension. This appears to be true even in the first grade and when t.o. measures are the criteria.

Grouping all the studies together, the evidence on spelling and creative writing is not as clear, but even with spelling, the evidence taken at face value indicates that some people's initial fears about i.t.a. have not been completely justified.

The problem really rests with how one evaluates the quality of the i.t.a. research conducted up to now. Let me repeat an earlier statement, that I feel the i.t.a. research studies are no better or worse in regard to experimental controls than any other reading research. The i.t.a. research is certainly not uniquely weak or strong.

I do concur with Downing that many of the i.t.a. studies have been so designed that it is difficult to determine whether the observed differences are due to the writing systems used or to the methodology and content found within various materials. I also concur with the criticism of Downing and others who have questioned the validity of using t.o. tests as criteria in the first grade when many youngsters will not have completed transfer. Such a practice results in not giving the i.t.a. medium a chance to really prove itself.

Enstrom, in the article cited earlier, asks whether the use of i.t.a. will "drag on" into the second and third grade. Implied in that question seems to be the idea that all youngsters should complete transfer by the end of the first year in school. I know of no major spokesman for i.t.a. who has ever claimed that there will not be some youngsters who will need to continue reading in the i.t.a. medium into the second and even the third year. It is reasonable to assume that there will be a wide range of individual differences in i.t.a. reading just as there is in t.o. reading.

The research evidence to date does say to me that we must continue to give i.t.a. its day in court. The case cannot be dismissed for lack of any evidence. However, it is not time, in my opinion, to send the jury out to decide the final verdict.

There are two groups of people to whom I would like to make some suggestions for future courses of action. First, to those of you who are in various aspects of elementary school work, I urge you to listen carefully to what is said in the future about i.t.a.

More and more evidence will be presented. At every convention, for example, you will be able to hear follow-up reports of the first grade studies discussed earlier in this paper.

Please do not be too quick to side with those who see absolutely no value in i.t.a., and at the same time listen carefully to those who make extravagant claims about its value. In reading interpretations and discussions of the i.t.a. research, be wary of such statements as the following that was made in answer to certain critics of the i.t.a. research: "What has been identified as the Hawthorne effect is really only the effect of throwing off the shackles of a guilt complex." (*16*).

If anyone from a school system should ask me my opinion of whether the school should introduce i.t.a. in its beginning reading classes, I would give a qualified "yes." I would want the school authorities to become fully acquainted with what i.t.a. is and what it is not. I would want them to become acquainted with all the available instructional materials printed in i.t.a. If they were able to find materials printed in i.t.a. which reflected their own philosophies of what reading is and how it should be taught, then I would encourage them to initiate, on a limited basis at first, the use of these materials. I would encourage them to make definite provisions for extensive teacher training and to set up within practical limits definite evaluation procedures. If the evidence from this initial pilot venture should meet or exceed their expectations, then I would certainly encourage them to consider further extensions of the project.

The second group of people to whom I would like to make some suggestions are my colleagues in the so-called ivory tower, those of you in college and university work. I believe we have certain responsibilities in teacher education programs to inform both prospective and experienced teachers about i.t.a—what it is and what it is not. If any of you have personal biases either pro or con regarding i.t.a. and its value as a writing system in beginning reading instruction, then you have a responsibility to state these feelings for what they are. Let us not hide personal and "subjective" opinions behind a facade of "objective" research.

In addition, it seems to me that we at the college and university level must be ready to conduct and encourage research into various aspects of i.t.a. Studies with tighter controls on content and methodology within materials are needed. More objective evidence on such variables as creative writing and handwriting is needed.

Those of you who believe in and have some commitment to i.t.a. should be ready to plan and conduct investigations designed to learn more about this new writing system. I feel we need to learn more about transfer and the best way to facilitate it. There is definite evidence that children whose first materials are printed in i.t.a. can transfer to t.o. materials without undue stress. But can we find even better ways of facilitating this transfer so that the greatest possible gains for children can be achieved? Perhaps the i.t.a. system itself can be improved to help this process.

The matter of what materials and procedures to use following transfer to t.o. needs careful study. If you believe that the use of this new medium does give beginning readers an initial advantage, then everything possible must be done to maintain these gains.

These suggestions are not an exhaustive list of possible topics for future research but would be a good beginning. I believe that I am sincerely dedicated to the objective of finding the best possible ways to teach the children of this country to read. I want i.t.a. to have its day in court along with a number of other innovations confronting us today. But, as a member of a very large jury, I do not want to be asked to render a final and sweeping decision before more evidence is presented.

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Reactions to Using i.t.a. in Beginning Reading in the United States

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Dr. Ames twice makes the point that the studies concerning i.t.a. are no better or worse than other studies in education. However, is it really important that the i.t.a. research is no better or worse than other studies? Is not the really important concern whether or not the studies do, in fact, provide the needed evidence in coming to decisions about the merits of i.t.a.? If the studies give such evidence, well and good. If they do not, what evidence is needed? For example, have the studies conducted to date in the United States given substantial evidence that i.t.a. as a medium is a useful tool for teaching young children to read? No, they cannot give such evidence because the studies conducted in this country have altered methods and materials in addition to medium. Therefore, there is no uncluttered evidence that i.t.a. as a medium per se is a useful tool.

Does i.t.a. as a medium lend itself to the use of various methods of instruction? Again, no studies reported by Ames have compared methods of instruction using i.t.a. as the medium to determine if i.t.a. can make for improved methods. There are only indications. More evidence is needed. There is a study currently being conducted by Helen Robinson at the University of Chicago that may provide some of the needed answers.

The studies reported by Ames seem to contain a number of similarities. For example, in reviewing the Ames paper I could not help but notice that the conventional procedures for reading instruction usually come out second best. A possible explanation, other than that conventional procedures are in fact less effective, may be that teachers in the control groups feel they are expected to know the conventional practices and are reluctant to ask for guidance in their use. Experimental teachers, on the other hand, can feel free to ask for help since they know asking for help is expected of them and will not be interpreted as a professional weakness on their part. The studies reported on i.t.a. seem particularly likely to be thus affected because i.t.a. is so obviously new.

Procedures can be suggested to encourage all teachers, control and experimental, to ask for help without making them feel that they may be criticized for not knowing something they should. For example, the researcher could spend time informally with teachers in the control group to establish rapport, which would help teachers feel secure in discussing methods of instruction. For research purposes, a teacher may feel more comfortable asking for guidance from the researcher and not the principal or consultant who has the responsibility of evaluating the teacher's performance for pay increases, promotions, and so forth.

Another attribute that many of the studies seem to have in common is that performance test differences were found in word perception and not in comprehension. Such findings seem strange since comprehension at this stage is highly reliant upon word perception. Perhaps such results may be due to the nature of the tests used. On the other hand, i.t.a. may be producing "word callers." At the very least, the results point to the importance of stressing procedures for developing reading comprehension. Of course, i.t.a. is a medium and, as such, bears no particular relationship to the methods used for teaching comprehension. However, if studies continue to show that i.t.a. helps children with word perception, but not comprehension, it must be asked whether i.t.a. is making only a superficial contribution.

In many of the studies differences were found between various experimental and control groups in respect to oral but not silent reading. Oral reading tests are administered individually, and silent reading tests are generally administered in groups. Therefore, the phenomenon of differences in oral reading and not silent reading may be due to the added unreliability of group tests. Perhaps researchers would do well to administer both oral and silent reading tests individually, in spite of the additional cost and effort involved.

Most of the studies reported were concerned with comparing group means. Such a procedure loses sight of the able and less able readers. Downing found in his studies that i.t.a. did not seem to benefit the lowest 10 percent of his sample (*1*). What is needed in this country are studies which will feature a closer look at the less able reader's reaction to i.t.a. Looking for ways to help children who are not reading up to their potential should be a major concern.

A criticism offered of many i.t.a. studies is that the children were tested in t.o. and not in the medium with which they were most familiar, i.t.a. Although important implications may be drawn from such testing, the practice of using transliterated tests is questionable. The process of transliteration may make the tests incomparable. Therefore, the best way to compare i.t.a. to t.o. success is probably to wait until the i.t.a. children have made the transfer to t.o., which indicates the need for longitudinal studies.

Ames points out, wisely I believe, that if schools wish to try i.t.a. they should initiate it on a limited basis. Even after successful pilot ventures with i.t.a., caution needs to be taken. Those teachers who are willing to take part in pilot ventures are also the ones who will probably have success. An intensive teacher education program, as Dr. Ames suggests, will probably be needed to properly test the contribution of i.t.a. to reading instruction.

Dr. Tanyzer gives a theoretical discussion of i.t.a. in the beginning of his paper and devotes the rest of the paper to a description of a program using i.t.a. This reader would have liked further discussions of other i.t.a. programs found in the United States, although they may not be as widely used as the program described by Tanyzer. Many readers would probably appreciate information concerning the other i.t.a. programs.

Dr. Tanyzer introduces the findings of Downing's experiments in Britain as evidence that i.t.a. is already established as a useful medium. The question must be raised of whether or not the findings of a study conducted in Britain have direct application for instruction in the United States. As Downing points out, children start school earlier in Britain, composition is generally emphasized earlier, and the schools in this country tend to use readiness tests more extensively than the schools in Britain (*2*). Any of these factors, and perhaps many others, could make it difficult to apply the findings of research in Britain directly to practices in the United States. Research on i.t.a. as a medium must be conducted in this country before conclusions can be drawn regarding its usefulness in American schools. Unfortunately, as Dr. Ames points out in his review of the research conducted in the United States, the studies reported so far in this country have not controlled adequately the variables of methods and materials to allow for significant conclusions about i.t.a. as a medium. Therefore, to date, there are hopeful indications, but little concrete evidence, that i.t.a. is a preferred early educational medium for our use.

Suggestions for altering methods and materials seem premature to this reader. Only after sufficient evidence has been gathered to support the usefulness of i.t.a. as a medium should methods and materials be developed to take advantage of i.t.a. Of course, some people may never be convinced that i.t.a. is a useful medium no matter how much evidence is available. But other people may be convinced too easily and implement programs which make no demonstrated contributions. Dr. Tanyzer describes an interesting program altering materials and methods which he proposes are complementary to the new medium.

Assuming for the moment that these suggestions are not premature, there are several questions which should be asked. For example, what evidence is there that the procedures suggested for transferring to t.o. are optional? Do the suggested procedures for teaching phonics take advantage of i.t.a. as a medium, or would other procedures make better use of i.t.a.? If phonic generalizations are not taught in the early grades, should they be taught later? Is the time saved in the early grades by not teaching phonic generalizations lost later because they need to be taught then? The answers to these and other questions are needed. If i.t.a. can be shown to be useful as a teaching medium, it may be desirable for research purposes to alter both medium and methods to find evidence that i.t.a. can make for improved teaching methods. For example, a well-known basal series suggests three alternative plans for using their experimental i.t.a. series in addition to their usual t.o. program. Perhaps by comparing these four programs methods could be suggested which would utilize the peculiar advantages of i.t.a. Certainly, a thorough investigation of the varied aspects of the different i.t.a. programs and materials could shed some light on the implications for using or not using i.t.a.

The author's purpose in this paper has been to react to the content of the Tanyzer and Ames papers, not to direct negative criticisms toward i.t.a. itself. This author believes that there may be much good in i.t.a. and hopes that his reactions will be viewed as an evaluation of what is known about i.t.a. and not an indictment against it. What can be said about where we now stand in respect to i.t.a.?

First, much has been written about i.t.a. as a medium and not a method or set of materials. In another sense i.t.a. is even more than a medium, it is an idea. In any attempt to teach beginning reading, steps must be taken to simplify the learning task. Some attempts in the past to simplify the beginning tasks of learning to read have included presenting only a few words at a time, presenting consistent grapheme-phoneme correspondences, or teaching sounds before words. One of the strengths of i.t.a. has been that it can be incorporated with some of the other promising attempts to simplify the beginning steps in learning to read. As an idea, i.t.a. is designed to simplify the beginning stages of learning to read through the use of a consistent orthography which makes for easy transfer to traditional orthography once there is no longer a need for i.t.a.

It would seem that any attempt to revise the alphabet to simplify the learning task would result in a medium similar to Pitman's i.t.a. For example, twenty-four characters of the traditional alphabet have been retained. In adding characters Pitman attempted to make them as close as possible to the traditional characters so as to help in transfer. There may be some legitimate questions raised about some of the added characters. For example, some children confuse the double *e*'s with two *c*'s. Other children confuse the double *oo* symbols with *w*'s. The *sh* character might have been formed so as to correspond better with the *sh* in regular print. There are present attempts to look more closely at the i.t.a. characters in hopes of making the transfer less troublesome. Nevertheless, i.t.a. does correspond closely to the traditional alphabet. The question, therefore, is whether a simplified orthography actually helps to simplify the early stages of learning to read, or whether the simplification is only an idea that sounds good but does not work.

What evidence is there that i.t.a. actually works? The studies conducted by Downing in Britain give much evidence that i.t.a. works there. However, these studies suggest that the problems of transferring to t.o. from i.t.a. are more troublesome than anticipated, although children in Britain are ahead even after transfer. These same studies indicate that some children seem not to be helped by i.t.a. Unfortunately, the studies conducted in Britain have not been replicated in the United States. The studies conducted up to now in the United States are, in the view of this writer, pilot studies. They are pilot studies in the sense that a pilot study will sometimes include many factors at one time to find out if further investigation is warranted. The studies reported so far in this country have altered the methods, the materials, and the medium. It is impossible to know without further investigation which of these factors is contributing to the success of the i.t.a. programs.

In summary, i.t.a. appears to be a promising innovation. It warrants much more careful investigation, however, before it is widely adopted as the preferred orthography for instruction in the beginning grades.

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Dr. Ames' survey of the research is very comprehensive in reporting data of the first grade i.t.a. studies. However, three of these studies have been continued by the U. S. Office of Education, and I should like to comment on the research findings of two of these studies.

Harry T. Hahn (*4*) in the Oakland County, Michigan, study has reported that at the end of the second year the i.t.a. group made higher scores in word recognition and were as good in spelling in t.o. as their peers who had learned to read with t.o. from the beginning.

In the New Castle, Pennsylvania, study Robert B. Hayes(5) has reported that at the end of the second year the i.t.a. group did as well in word recognition and spelling as their peers who were taught in the t.o. medium. In all other areas of reading there were no significant differences. Hayes states that they are still trying to determine "Which of these methods of teaching beginning reading is best for which children?" and that "Replicative and longitudinal evidence is being collected during the 1966-67 school year to help answer this question."

Dr. Ames states: "If anyone from a school system should ask me my opinion of whether the school should introduce i.t.a. in its beginning classes, I would give a qualified 'yes'." Frankly, I would disagree with this point of view—just because a new approach or medium is presented doesn't mean that a school system should jump on the band wagon. Would it not be just as well to give a qualified "yes, in the school system in one first grade class we will use i.t.a.; in another, Words in Color; in another, Phono-Visual; in another, Programed Learning; in another, Language Experience; in another, Unifon, etc."?

If a school district wishes to launch any innovative methods, it is necessary that a good program of research design be considered. Most districts do not have the competent personnel in this area, so I feel that such innovative research studies should be conducted in university research centers, particularly with educators who are impartial and without vested interest in the outcomes.

In weighing the statistical evidence, no logical basis exists for saying that i.t.a. is a more efficient means than any other for teaching American children to read English. In the years 1962-63-64 carefully worded promotional literature was developed that supported i.t.a., and these papers were widely disseminated in America. This certainly touched off long-felt uneasiness about traditional orthography. Unfortunately, extensive evaluation was not delayed until sufficient time had elapsed to establish whether this medium is superior to t.o.

Dr. Tanyzer has stated in his paper, and it has been argued by others in favor of i.t.a., that a teacher need not change her methods—only the material needs to be changed from t.o. to i.t.a. The teacher need not change her ideas. No re-thinking about teaching of reading is necessary; she is merely introducing a new kind of print.

I feel methodology in the use of i.t.a. does enter into the picture and certain more creative ways of teaching reading are favored, especially the use of the language-experience approach and the greater use of early writing experiences. The teacher must become involved in the use of these methods, and the sooner she does such innovating, the more rapidly children will learn the fundamentals of the reading process, and in a far more meaningful and interesting manner. The teacher must apply methods which will promote maximum reading and writing growth and she must know at what point transition should be introduced for each student, and which method will best facilitate the transfer of writing (spelling) to t.o.

Methodology does enter the pictures particularly in writing. With i.t.a., children use a vocabulary more nearly commensurate with their speaking facility, but this doesn't mean, necessarily, that it is better in quality of content or structure. The teacher must be the catalyst to bring about a wider range of literary skills. Furthermore, the teacher must learn the i.t.a. code, which is a method, through in-service training before she begins the use of it in her first grade class.

Present i.t.a. research in the United States gives inconclusive evidence as to whether i.t.a. is a superior medium for teaching the fundamentals of the reading process. No studies show that children who have learned to read by this code suffer or are handicapped by having learned the basic fundamentals of reading and spelling by this medium.

The reason that the research is inconclusive may be because we are in great need of better tests to measure so-called reading achievement. Stauffer (9) believes that "the hard-to-measure outcomes of critical and creative reading must be measured with tests replacing those that measure only superficial evidence of quality reading performance." Many of the tests to which Stauffer refers as inadequate were designed for use in 1924 and are still in vogue.

I feel a more positive argument for i.t.a. would be available if it could be shown that its use resulted in fewer failures in reading. From the data available to date, it is difficult to be certain on this point.

Two of the three questions proposed in i.t.a. research in America have been answered:

First, the orthography of English is a deterring factor in learning to read; children do make faster progress in this new code. Second, children have little difficulty in transferring their reading and writing skills to traditional orthography. The third part of i.t.a. research is inconclusive—that is, whether children are better "readers" due to their exposure to this two-stage process. To date, American children are no better readers in t.o. as measured with present standardized and informal tests.

The main contribution to date by i.t.a. is probably in the help it gives in unlocking words, which is one part of the process of learning to read. The contributions to other parts of the reading process seem to me to need further evaluation.

It is difficult to keep an open mind about the use of i.t.a. in America. Emotionalism plus the Madison Avenue techniques used for and against i.t.a. have played a large role in making i.t.a. advocates resemble a cult. Exaggerated or heated claims have been found in the popular press, television, radio, at some professional conferences, and in some professional journals. Such articles, "How to Eliminate the Non-Reader" (*6*), "Some Call It A Miracle" (*1*), "What is I/T/A?" (*7*), and "They Still Won't Teach the ABC's the Modern Way" (*10*), have produced much controversy. The emotional propaganda, both for and against, has tended rather to obscure the real nature of Sir James proposal (*8*) as well as its apparent advantages and defects. Perhaps the speed at which a particular publisher has moved to push an idea has greatly injured the permanent future of i.t.a. research in America. Is it possible to be unprejudiced and impartial? Educators, particularly in university circles, already may have reached resistive conclusions.

There is just one major danger that seems to have disappeared from the horizon in the i.t.a. experiment in America and that is that the experiment will cease and a crusade of switching to i.t.a.

will begin. The current research is not yet conclusive enough to warrant wholesale acceptance.

Further research is also needed, with better controls and evaluative procedures, to determine whether changes in some of the present i.t.a. Pitman characters would improve the phoneme-grapheme relationship and ease the transition from i.t.a. to the traditional alphabet.

Perhaps better transitional materials could be designed to curb any temporary setback in fluency when moving from one medium to the other. Perhaps some setback at transfer is a small price to pay for heightened confidence in the early stages of learning to read. Downing (*2, 3*) points out that "Transfer could be facilitated if the teaching materials, methods, and the timing of transition stage from i.t.a. to t.o. were better understood." Thus, in a modified form, i.t.a. may become an extremely powerful tool for the teaching of the initial stages of the reading process. The i.t.a. approach, though research about it is inconclusive in the United States to date, definitely appears to have something to offer to the field of basic reading instruction.

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USING i.t.a. IN BEGINNING READING
(GREAT BRITAIN)

The Nature and Functions of i.t.a. in Beginning Reading

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WHEN I FIRST introduced i.t.a. into America at the Educational Records Bureau Conference (5) in New York City in 1962, I suggested that a research program of at least ten to fifteen years would be needed before final conclusions on i.t.a. could be drawn. Now, five of these years of research in Britain have been completed, and already one final conclusion can be stated with certainty while others are beginning to emerge more clearly. These conclusions were given in my report (8) in *The i.t.a. Symposium* published on January 31, 1967 by the National Foundation for Educational Research in England and Wales:

Conclusion 1. "i.t.a as an example of a transitional writing-system for beginning reading and writing in English generally produces superior results in t.o. reading, and in t.o. spelling by the end of the third year of school."

Word recognition tests show the most effect, and the highest achieving segment of the population appears to gain the most from i.t.a. Slow learners begin to show some improvement by the end of the third year, "but the poorest ten per cent show negligible improvements in test results."

The original estimate of a need for a ten- to fifteen-year research program is confirmed in the following proviso. "It should be recognized that it is still uncertain how *ultimate* levels of t.o. reading skills and related attainments are affected by beginning with i.t.a., since the research has not yet followed the children into the later stages of education."

Conclusion 2. The success of i.t.a. in improving t.o. literacy skills occurs in spite of an important setback in the growth of these basic skills at the stage of transition from i.t.a. to t.o.

Teachers' subjective impressions usually suggest that the transition from i.t.a. to t.o. occurs smoothly and imperceptibly, but t.o. reading test results of i.t.a. students between the middle of the second year and the beginning of the third year are significantly inferior to the scores of these same students on parallel i.t.a. tests given a few weeks or months earlier.

On the basis of this second conclusion the report notes 1) ". . . the use of i.t.a. requires a longer course than is often contemplated. Certainly for the slow-learners at least it needs to extend into the Junior School" *(at least three full years of i.t.a. are needed for such children)*. 2) "A series of experiments in an experimental psychology laboratory should now be conducted either to shape i.t.a. for this transitional purpose or to produce an entirely new system."

Conclusion 3. "The traditional orthography of English is a serious cause of difficulty in the early stages of learning to read and write." This third conclusion is the one that can be stated with the strongest degree of confidence. The evidence is quite incontrovertible. The British i.t.a. experiments show that

1. t.o. slows down children's progress in the basal readers.
2. t.o. causes comparatively low scores on all tests of reading, but especially word recognition and accuracy. For example, the average t.o. pupil can read in t.o. less than a half of the words in the average i.t.a. pupils' i.t.a. word recognition vocabulary by mid-second year.
3. t.o. also causes poorer results in written composition.
4. t.o. has a seriously limiting effect on the size of children's written vocabulary.

The setback in the transition stage reported in Conclusion 2 (above) provides further confirmation of the handicapping effect of t.o., which still makes itself felt at that later stage. The report's indictment of t.o. is clearly justified by this great weight of evidence:

> The unequivocal conclusion from the results of these experiments is that the traditional orthography of English is an important cause of difficulty in teaching and learning reading and writing in English-speaking countries. So long as t.o. is used for beginning reading and writing one must reckon that children are more likely to become confused about the tasks of reading and writing than they would be with a more simple and more regular system for English.

Judgments of the British i.t.a. project

Besides my research report, *The i.t.a. Symposium* also contains eleven independent judgments of my report, and an overall summing up by Dr. Wall, Director of the National Foundation for Educational Research in England and Wales. Each of these research psychologists or reading research specialists was given a copy of the report and asked to write a review of it. Although some of the reviewers found reasons to criticize the work, the general consensus appears to be favourable. For example:

Sir Cyril Burt (*4*), Emeritus Professor, University College, London, England:

> If the ultra-cautious reader of this volume still feels that none of the advantages tentatively hoped for at the outset have as yet been proved, he must at least agree that the elaborate investigations here described have been entirely worth while. No one can read the preceding report without recognizing that we now know far more about the processes of reading and of learning to read than we did before the experiments were undertaken, and that valuable experience has been gained in regard to the practicable methods of research in the bewildering field of education.

Dr. Jack Holmes (*12*), University of California, U.S.A.:

> This reviewer is impressed with the tenacity with which Downing strove for objectivity throughout all phases of his study. He exhibited ingenuity in contriving and carrying out, over a three-year period, a design which seems to have utilized the best in his data. *His step-by-step analysis is thorough and cautious and his concluding remarks are conservative. Further, his discussion of the weaknesses in i.t.a. brought to light by the study, definitely points to a new hope on the horizon.*

Dr. A. Sterl Artley (*1*), University of Missouri, U.S.A.:

> The Downing report presents the results of a definitive and completely objective study of the value of the Initial Teaching Alphabet in early reading. Though studies of its use elsewhere may show results at variance with those obtained in England and Wales it is hoped that such results would be obtained from studies done with the degree of objectivity found in this.

Dr. W. D. Wall (*16*), Director of the National Foundation for Educational Research in England and Wales:

> Most of the contributors pay a well deserved tribute to Downing for his attempt to control these variables as far as possible and applaud the caution with which he presents his results. . . . In the phase into which education seems now to be passing of large-scale innovation in method, curriculum and organization, there are not wanting many and powerful voices to say that objective evaluation is unnecessary or impossible. The work carried out by Downing and his team gives the lie to both.

Implications for reading instruction

What does the research reported in *The i.t.a. Symposium* tell teachers about the essential nature and functions of i.t.a. for classroom practice? To answer this question I must move from the strictly limited area of my research to the zone of educational judgment based only partly on the research findings. In my research on i.t.a. I have tried to avoid value judgments about the ends and means of reading instruction, but now I shall accept the invitation to tell what's good about the i.t.a. idea. Thus, what follows is my judgment as to why the i.t.a. idea has value in the education of our girls and boys. (Please note: "*the i.t.a. idea*" and not just "i.t.a." I will explain why at the end of this paper.)

We must be quite clear in talking about the educational values in i.t.a. that we are not only moving away from the strict limits of research knowledge, but also going beyond the essential nature of i.t.a. itself. Sir James Pitman (*15*) made it quite clear when he first introduced i.t.a. (then known as "Augmented Roman") that it is purely and simply an alphabet with certain spelling conventions of its own. The alphabet itself is *not* a teaching method, and it is *not* inevitably associated with any particular set of teaching methods or educational values. The position is this. Sir James Pitman presented us with his alphabet. We have tested it in research. We know as a result that it has certain effects on children's learning of literacy. That is all. Give this knowledge, *educational practitioners* must decide whether or not to use i.t.a. and, if so, *how* to use it.

How to use i.t.a. depends not only on i.t.a.'s objective characteristics, but also on the aims and principles of education.

Therefore, the propositions which I am going to present are influenced by my own educational value judgments, which in turn bear the mark of the influence of my professional training in the British education system.

Sir James' i.t.a. is attractive to me and many other professional educators in Britain because it facilitates the approach to primary education for which we have been striving and making such good progress in the last twenty years and more. I believe that the reason why i.t.a. is spreading so rapidly in Britain is because the i.t.a. innovation fits very well into our general pattern of progress. In particular it provides important help for our teachers' efforts to approach learning through discovery and in our concern for the child's full personal development through self-expression and experiences so fitted to the child's abilities that a healthy self-image can grow.

Learning how to learn

In recent years that importance of transfer of learning has been reinstated, chiefly through the experiments of Harry Harlow, which show how learning to solve a specific problem leads not only to learning how to perform that particular task, but also the learning how to learn. Jerome Bruner (*2*) states:

> Learning should not only take us somewhere: it should allow us later to go further more easily. [He indicates the importance in education of] the transfer of principles and attitudes. In essence, it consists of learning initially not a skill but a general idea, which can then be used as a basis for recognizing subsequent problems as special cases of the idea originally mastered. This type of transfer is at the heart of the educational process—the continual broadening and deepening of knowledge in terms of basic and general ideas.

Learning how to learn is not only intrinsically valuable in the educational process. It also has special significance at this time in the development of our civilization. We cannot meet the demands of today's and tomorrow's world unless we make "learning how to learn" a central principle in education. Man's store of knowledge has become so vast that no individual can carry even the knowledge of one specialized discipline "in his head." The research explosion with the consequent growth in knowledge makes it impossible to cram in all the individual facts. Instead we must provide students with the learning, studying, discovering, and structuring skills which will make them efficient in finding and utilizing knowledge stored in libraries and computers.

Furthermore, our world is moving into an era in which change will be the norm, and retraining and new learning will be a constant need. In all our teaching efforts we must be continually developing with deliberate forethought the skills needed for new learning and an attitude of readiness for change and discovery. It is clear that the principle of learning how to learn and the aim of preserving and fostering children's natural curiosity and drive for discovery is indeed of central importance in today's schools.

Discovery and learning how to learn

The greatest educational value of i.t.a. derives from the fact that it facilitates the discovery approach. The *discovery* of the structural relations of written English and spoken English comes more easily with i.t.a. For example, the sound common to *fly, high, guy, mind, pie, rye, time* is concealed in t.o. because the same sound is written in all these different ways—*y, igh, uy, i, ie, ye, i.e.* In i.t.a. the connection and structure hit you in the eye. A full description of i.t.a. and its spelling rules may be found in Downing (6).

I am sorry to have to report that some people seem to have wasted i.t.a.'s greatest virtue by jumping to the wrong conclusion that this more obvious structural relationship in i.t.a. means that we should drum it into children's heads with formal phonic drills. For example, according to Ohanian's description of i.t.a. based, she says, on a study of the Mazurkiewicz and Tanyzer Early-to-Read i.t.a. series (*14*): "The mode of teaching and learning is largely through telling and being told respectively and much less through guided discovery."

Ohanian unfortunately makes the error of attributing this "telling and being told" teaching methodology to i.t.a. in general, whereas the truth is that the approach she describes is quite unrepresentative of what is done in i.t.a. materials and i.t.a. classrooms in Britain, where i.t.a. began. Indeed such "chalk and talk" teaching fell into disfavour long ago in British primary education. Ohanian's description of i.t.a. is so full of such misconceptions that, as I said in my article "What's wrong with i.t.a." in the *Phi Delta Kappan* (9) recently, her description of i.t.a. based on her study of the i.t.a. Early-to-Read materials "is so far removed from the reality of the majority of their classrooms that it would produce gasps of incredulity from British teachers experienced in i.t.a."

This controversy demonstrates the great importance of the problem of *how* to use i.t.a. Educators must judge this issue for themselves. Ohanian has described one way, and some people may want to teach i.t.a. that way. The really serious criticism that must be made of Ohanian's article is her assumption that it is the only way, when in fact it is not even the most common way of using i.t.a.

My point of view is that if Ohanian were right in describing i.t.a. as only "a phonic approach" in which "a basic sight word list is not an important consideration," then it would lose for me its major educational value. Her "telling and being told" phonic method throws away the valuable opportunity for the discovery approach, which is made so much more accessible by the greater regularity of the sound-to-letter relationships of the i.t.a. code.

Educators who seek, as Jerome Bruner does, "to present the fundamental structure of a discipline in such a way as to preserve some of the exciting sequences that lead a student to discover for himself," will recognize i.t.a.'s potential for the discovery approach in primary education. They will want also to emphasize reading for meaning rather than the abstract analysis of the alphabet and the sounds of English in alphabetic workbooks when the learning of reading begins. The important plus in learning how to learn for children who begin with meaningful words and sentences in i.t.a. is that they learn at the same time the correct orientation and attitudes for a lifetime of reading. The truth we want children to learn from the beginning in i.t.a. is that reading is getting information and pleasure from books (not making noises to letters—which is the orienting effect of beginning with abstract phonic or alphabetic analysis).

Most important of all, beginning with meaningful sentences and words in i.t.a. allows teachers to provide opportunities for children to make discoveries of the relations between speech and writing. As I noted earlier, the connection between letters and sounds "hits you in the eye" in i.t.a., and this applies even in normal English sentences. We do not need to hunt out strange situations of the "Nan can fan Dan" variety. In other words, i.t.a.'s regularity makes it less necessary to *teach* phonics at all, because discovery is made easier by i.t.a.

But please note that I am not denying that we need phonics in learning to read. Of course we do, but the phonic aspect must come in such a way and at such a time that it is clear to children that phonic analysis and synthesis is only a tool. If i.t.a. teaching begins with abstract phonic workbooks the tool may master the child, and the chance for discovery is certainly lost. If, on the other hand, phonic discovery comes after the correct orientation for the purpose of reading for meaning has been established, then children are more likely to master the tool, and learning to read can fit naturally into the overall discovery approach, which is so vital in modern primary education.

Self-expression in i.t.a.

When girls and boys discover for themselves that writing is "talk written down" the whole of their exciting world of activities, experiences, and imagination can be communicated in the new medium of writing. The British research with i.t.a. has shown how t.o. frustrates the young child's interest in communicating through writing. In contrast, i.t.a. makes it easier for children to "speak and think with their pencils." This potential for self-expression is another of i.t.a.'s important educational virtues which ought not to be wasted. To make best use of it, a language-experience approach in which children's i.t.a. writing is emphasized is essential. It is encouraging to see the i.t.a. language-experience approach, which has been so important in i.t.a.'s development in Britain, now being applied rather more extensively in i.t.a. experiments in the United States.

i.t.a. and the self-image

My research on i.t.a. has been limited to measurable attainments, but it seems reasonable to infer that the success which is more certain and more rapid in beginning reading with i.t.a. brings with it some improvements in children's attitude toward learning. Such attitudes may be at least as important as the development of problem-solving skills. Jerome Bruner says, "Mastery of the fundamental ideas of a field involves not only the grasping of general principles, but also the development of an attitude toward learning and inquiry, toward guessing and hunches, toward the possibility of solving problems on one's own." And he suggests that in developing such attitudes, "an important ingredient is a sense of excitement about discovery—discovery of regularities of previously unrecognized relations and similiarities between ideas, *with a resulting sense of self-confidence in one's abilities.*"

Many teachers have commented on i.t.a.'s beneficial effects on the development of children's self-confidence (*7*); for example in our first experiment with i.t.a. for beginning reading a headmaster commented:

> Probably to a headteacher, visiting the classroom from time to time, the change in the general attitude of the children is the most striking aspect of the experiment. It is not that they are better behaved as the word behaviour is generally used. They appear to have an uninhibited proficiency about them. They set about things with more purposefulness. To me they appear to manifest in their play and general attitude, a new competence which can perhaps, be attributable to the self-sufficiency they have found in so easily mastering their reading.

Wilkinson (*18*) in her review of the i.t.a experiment in Bolton, Lancashire, states

> All of them (teachers) agree that children bring to their task, greater confidence and acquire more quickly the assurance that comes with the belief that they will succeed.

In a more recent survey of teachers' reports on the use of i.t.a. in special schools for retarded pupils (*10*), the commonest type of spontaneous response from the teachers was to favour i.t.a.'s use for its effect in improving their students' self-confidence, or independence. For example, a teacher from the Midlands of England in a special school with pupils aged eight through eleven years with IQ's between 4 and 78 wrote

> From the earliest days there was a noticeable improvement in attitudes towards the reading situation, which was soon reflected in other subject areas. For the first time many of these children enjoyed feelings of success rather than failure. They clearly felt secure in the knowledge that the processes they were learning were simple, logical and could be relied on. They become more self-reliant and less demanding.

Byron Ward and John Beauchamp (*17*) have also written about i.t.a.'s use with the mentally retarded.

Thus a third important virtue of i.t.a. is the contribution it can make to the development of a healthy self-image. The damage caused by t.o. to children's self-respect is probably greater than is generally realized, for failure in learning to read in t.o. often arises from the child's application of correct reasoning to problems which have idiosyncratic or "unreasonable" solutions. Rationalizations such as "I am not good at reading," or "I am bad at writing," or even "I am not a good student" are needed to explain why one's attempts at rational problem solving with t.o. have failed.

Although we cannot claim to have objective proof of such influences, it does not seem unreasonable to surmise that the greater simplicity of i.t.a., which has doubled children's reading vocabulary (as measured by objective tests), should also help to prevent the corrosive effects of the unreasonable demands of t.o. Is it not probable that i.t.a. will help more children to perceive themselves as "good at reading" and "good students" because of their rapid succsss in a logically structured system which they can understand?

Conclusion

In introducing personal value judgements of the i.t.a. idea I emphasized that I used the phrase "*the i.t.a. idea*" and not just "i.t.a." This is because the three chief values of i.t.a. might be found with other simplified systems if used in the way I have described: i.t.a. is not unique. It is a member of a class which is called in linguistics "simplified and regularized writing systems."

In the British research, i.t.a. seems to have been rather successful, but we regard it as only an example of the principle of regularizing and simplifying English orthography. Now that we know the principle is valid we should go on to find the best way of implementing that principle. This may be i.t.a. or it may be some other system. Even if it is i.t.a., we should seek further improvements within i.t.a. In my research report in *The i.t.a. Symposium* (*8*) I have pointed out that "A series of experiments in an experimental psychology laboratory should now be conducted either to shape i.t.a. for this transitional purpose or to produce an entirely new system to maximize the combined effects of simplicity and regularity at the beginning stage and similarity to t.o. on the relevant dimensions for the transition stage."

My proposal for improvements to i.t.a. has been supported by Dr. A. Sterl Artley and Dr. Jack Holmes in their contributions to *The i.t.a Symposium* (*1*) and by Sir Cyril Burt (*3*) and Dr. Edward Meade (*13*) elsewhere. There may be some problems in the way of improving i.t.a., and I have discussed some of these in my recent article in the *Phi Delta Kappan*, and more detailed suggestions are given in my new book to be published shortly (*11*).

But whether we use i.t.a. as it is now or some modified i.t.a. in the future, or some similar simplified and regularized writing system (e.g., Unifon), I would urge that we should consider carefully *how* we use it. If we take into account our new understanding of the educational process, and if we want to plan for a future of continual new learning, then we must, I believe, take care to apply the i.t.a. idea by such methods as will ensure that our girls and boys receive the greatest possible benefit from its three chief virtues in 1) facilitating the discovery approach, 2) providing a better medium for self-expression in writing, and 3) creating learning and problem-solving situations which foster a healthy self-image.

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Research Findings on the Use of i.t.a. in Beginning Reading

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DR. DOWNING has given a clear outline of the functional aims in beginning reading which lie behind the main i.t.a. proposition. I have to say that though I agree wholeheartedly with Dr. Downing's description of the i.t.a experimental aims, I would have put rather a different gloss on certain of its propositions. But, be that as it may, I agree that's what the i.t.a. experiments were about. Of course, the major field studies of i.t.a. mounted by the Reading Research Centre of the London Institute of Education have provided the main body of research findings of the effects of using i.t.a. in Britain. However, it should be remembered that these are not the only experiments using i.t.a. and that there are a number of research reports (to be published in the next twelve months) coming from different stables. Many of the results will show patterns similar to those reported by Dr. Downing, but some of them will produce strikingly different results. I shall want to refer to the significance of this later.

On entering into a discussion of the main body of results of i.t.a. research findings on children *beginning* reading, I want to draw attention to a curious fact in relation to the use of i.t.a. in teaching backward readers, i.e., with the remedial use of i.t.a. If we were to make a survey of the attitudes to i.t.a. of teachers in England and were to ask them to estimate its usefulness, we would naturally find the infant school teachers sharply divided, the minority who use i.t.a. singing its praises, with cautious (though sometimes very vigorous) rejection of it by the overwhelming majority of teachers who don't use i.t.a. A sizeable number of infant schools who took up i.t.a. with enthusiasm have now abandoned its use. Where one would find a great deal of support for the conditional use of i.t.a. is amongst those concerned with teaching backward readers in the junior schools, the secondary modern schools, and even in schools for those we call E.S.N.—schools for the educationally handicapped children (for identification purposes, children with IQ's of 35 through 75). They declare their interest in i.t.a. because it represents to their pupils a novel approach towards learning a skill which they have signally and disappointingly failed to learn by other methods.

Yet, it is precisely in this area of remedial use in which objective studies of the value of i.t.a. have produced negative results —either results shown to be insignificantly different from other methods or, indeed in one or two studies, not so good as results achieved by methods using the traditional orthography. In *The i.t.a. Symposium,* which I shall be quoting from extensively, we find an opinion expressed by Mr. Gulliford of Birmingham University: "Even if i.t.a. were not to be widely used in the beginning stages of reading, I think it would continue to be used as one approach in the repertoire of remedial teachers of older backward children with whom a novel approach is so often needed for the reteaching of pupils who have constantly failed" (6). I agree, and I understand why Gulliford makes this point in spite of the fact that it flies in the face of all the experimental evidence.

One of the many points that could be made of these interesting facts about i.t.a. and backward readers is that the publication of experimental results in the traditional way (for example, in the way the main i.t.a. research results are presented) does not automatically produce behavioural changes in teachers in the expected direction. I believe that there is evidence that this is true of the whole i.t.a. experiment. For example, the i.t.a. experimenters have insisted that i.t.a. is not a method but a medium encouraging teachers to teach by any preferred method, e.g., the traditional word-whole method. Yet, in fact, teachers using i.t.a. automatically turn to teaching by phonics, and very, very old fashioned phonics at that.

Gulliford goes on to say " . . . the i.t.a. experiments may also have drawn attention, as Downing suggests, to other ways of circumventing the irregularities of t.o. Indeed the trend towards a more careful and systematic development of phonics instruction was apparent before the introduction of i.t.a." I must heartily agree with this point, and that is why I have been pleased by a subtle change in the formulation of the aims and objectives of the i.t.a. experiment as they have proceeded. This change was noted, with I think a similar feeling of satisfaction, by Morgan and Proctor and others in *The i.t.a. Symposium*.

Initially, the whole project was "to test the validity of the claims made by supporters and proposers of the Augmented Roman Alphabet. The alphabet to be used will itself be on trial." Sir Cyril Burt, however, in his introduction to Dr. Downing's book *Too bee or not to be*, published in 1962 (4), widened the conception of the aims of the experiment, pointing out that "not only might modifications of the Augmented Roman Alphabet need to be considered but also alternative types of rational orthography." Dr. Downing, however, in the body of that book, still stated the aim of the experiment as "investigating the effectiveness of the Augmented Roman Alphabet as a medium for teaching reading." There, until the i.t.a. symposium, the matter seemed to rest.

Now, the aim of the experiments has been redefined by Dr. Downing (5) as follows: 1) to investigate traditional orthography as a cause of difficulties in learning to read; 2) if there are difficulties, to learn the nature of these difficulties and what could be done about them, e.g., learning a transitional alphabet and transferring later to t.o. or completely refashioning the mode of spelling in English. It follows, therefore, that the i.t.a. experiments must have a third aim, viz., to enquire into the difficulties that children might find in learning i.t.a. or of later transferring to t.o. These three aims of the i.t.a. experiment now reported are as I have just outlined, and Dr. Downing and his coworkers define them in this way.

We ought then be prepared to enquire how these questions have been answered by i.t.a. experiments. That is to say, we should ask not whether the experiments have proved i.t.a. is better than t.o., but how far they have answered the three questions. However, as Morgan and Proctor (8) have noted, it seems to me that basically the experiments were either not designed to answer these questions or, if they were, then they were inefficiently designed. For the question really answered by the research reports concerns, basically, the effectiveness of teaching reading by i.t.a. as compared with teaching reading by the same basal readers printed in t.o. Answers to the other more important and more far-reaching questions only arise out of secondary and even adventitiously collected data.

It's a pity really—I hope that Dr. Downing's suggestion of more subtly designed *laboratory* studies will be carried out on the effects of different orthographies on the problems of teaching reading. He and I are jointly engaged at the present time in promoting reading research centres in England where laboratory and practical research work on reading of this sort can be carried out. The sorry truth is that at the moment, now that the reading research unit at London is ended, there is not a research institute with an overriding interest in reading. Many contributors to the i.t.a. symposium made this point, none better than Professor MacKinnon (*7*). In explaining the complexity of learning problems involved in reading, he hoped that the comparisons between i.t.a. and t.o. made in these investigations with their support for i.t.a. will stimulate the continuation of the "social experiment" the i.t.a. experiment represents. He added: "There is just one major danger in the i.t.a. social experiment and that is that the experiment will cease and a crusade will begin." I fully endorse this and, incidentally, every other point made by Professor MacKinnon in his contribution to the i.t.a. symposium.

Then what have the i.t.a. experiments shown? It would be impossible to give here anything more than an outline of the findings with my own particular slant on them. I must say that the Book, *The i.t.a. Symposium,* is itself an experiment in research reporting which has been entirely successful. I commend it to you for careful study because it is just the sort of book which removes reading research from the area of salesmanship, of the reading panacea, and actually helps readers towards a balanced assessment of research reports. Perhaps it will even stimulate behavioural changes in the practice of teachers who read it.

As is well known, the main i.t.a. experiment was carried out in a form which Dr. Downing describes as a *field* experiment. That is to say, it was concerned with comparing the reading abilities of a large number of children at work in ordinary infant schools under normal school conditions. The reading abilities of children who had been taught by a relatively large number of teachers using basal readers printed in i.t.a. were compared with the abilities of the same sort of children taught similarly but using the same basic readers printed in t.o. Naturally, strenuous attempts had to be, and were, made to equalize, compensate for, or eliminate the effects of extraneous factors so that finally the only reason for any difference in reading achievement could be assumed to be the orthography, i.t.a. or t.o.

Along with many other contributors to the symposium, I question whether Dr. Downing was able to get as near to this ideal as he appears to believe. I am particularly doubtful of the attempt to equalize the impact of the so-called Hawthorne effect. If there is anything about the Hawthorne effect that we do know, it is that we don't know the size of the effect, and if we don't know the size, it follows that it is chasing a will o' the wisp to attempt to equate the effect of the unmeasurable.

But given all this, what did the results show. I quote Dr. Downing (5): "Question 1, Can children learn to read more easily with i.t.a. than they can with t.o."—using various criteria; progress through the books of the basal readers, word recognition tests in i.t.a. for i.t.a. groups and in t.o. for t.o. groups, accuracy, speed and comprehension in reading of prose aloud. Dr. Downing concludes that the data show that in all four criteria the i.t.a. group "made significantly more rapid progress." We would need a year at least to enquire into all the implications of this statement. First of all, Dr. Downing does not, I am sure I am right in this, ask his readers to conclude from this finding that i.t.a. is the best medium for teaching reading. Readers are, I think, being asked to believe that these results show that i.t.a. is a more satisfactory medium for children to learn to read in than is t.o.

"Satisfactory"? What does this word mean? It can, and does, mean a hundred, a thousand different things. I am not now considering the important question of transfer. I refer only to the criteria. Dr. Downing asks, "Can children read more easily with i.t.a.?" The answer he says is, "yes," and presents the evidence. The evidence is to be found, it is inferred, from the fact that the *mean* scores on the various criteria tests are higher for the i.t.a. group than for the t.o. group. But it is obvious, and Sir Cyril Burt was quick to point this out, that it is very dangerous to argue about a group of children's performances by simply making comparisons of *mean scores.* Sir Cyril (*2*) writes: " . . . from the work that I myself have done when studying methods of teaching, particularly methods of teaching the young beginner to read, I have become convinced that the individual differences between one child and another are so great and so numerous that it is, as a rule, decidedly precarious to draw any generalization between two groups of children as a whole. The mere comparison of group differences may be misleading." He goes on to quote an elementary statistical example showing that a mean increase may mask the fact that fifteen out of twenty children in a class did worse using a certain approach, whilst five did much better. This sort of error, I believe, exists in much of Dr. Downing's statistical reasoning. I have shown elsewhere, for example, that when the cumulative frequency distribution (*The i.t.a. Experiment*) of test marks which he gives are re-expressed as ordinary frequency distributions and we then look at the proportion of non-starters (determined not by teachers' subjective reactions to children handling the books in the series but as those pupils who score 4 or less on, say, the Schonell Reading Test, R.1), the proportion of non-starters of those reading in i.t.a. is startingly high, much higher than many other studies have found for children of similar age and background using different methods of t.o.

I suggest that there is something in the i.t.a. experimental setup which has speeded up the acquisition of reading skills of those children who normally learn to read with comparative ease, but which gives no help and even may provide a hindrance to those whom we would expect normally to have some difficulty in acquiring reading skill. Here we come face to face with the problems of evaluating i.t.a. with an experimental design and methods of analysis of the type used in the i.t.a. experiment. Many of the contributors to the i.t.a. symposium question the design plan of the experiment, and it is my opinion that it can be shown to have produced results which are somewhat spurious.

Professor Vernon points out, by contrast, a small but well-controlled study by Swales in Manchester, which showed that after three years under similar circumstances children taught via i.t.a. showed no significant superiority over those taught via t.o. (*9*). This might, I suspect, result from any similar more sophisticated studies, more closely approximating the laboratory type of experiment, which have been carried out. An experiment carried out in Hull, for instance, shows results very similar to those of the i.t.a. experiment in favour of a much more bizarre approach to teaching reading, using t.o. as against i.t.a., a colour system, and a direct phonic approach. A study in Scotland seems to be coming to the same conclusion as the Swales report. So that the statement that after one and a half year's schooling children using i.t.a. seem to be six months in advance of those using t.o., is a complex and perhaps dubiously helpful statement.

Is the rate of acquiring reading the best criterion? Could it be that it is for some children, but that with others a slower and more systematic approach would ensure that they would acquire truly useful, functional reading skills? I am sure that in the United States there are sociological determinants of criteria to be used for judging the success of an educational method. The determinants will differ from those in England. It is very clear to English people why they want their bright children to rush to reading as early as possible. Early reading means a better chance in the eleven-plus examination. Success (about 20 percent of all children) in that examination means a chance of higher education, of university education, of entry into the professions. No wonder every mother wants Johnny to read well at *six* years of age. I should warn against accepting this criterion without strong questioning.

Dr. Downing also does give some evidence about the differential increase in speed of learning recorded by children of various "achievement ranges." I am not sure that Dr. Downing presents this evidence in the best possible way, but he states his conclusions as follows (and I agree wholeheartedly that the conclusions do follow from the evidence). After showing that high achievers using i.t.a. did very much better than high achievers using t.o., and that the same was true, to a lesser degree, of the middle achievers, the result which many people expected (that is, that i.t.a. would prove to be of greatest value to the slow learning children) failed to materialize, since "among the low achievers . . . on the earlier tests little or no measurable differences existed between the scores of i.t.a. and t.o. groups." However, later tests indicate that the i.t.a. low achievers became superior to their t.o. counterparts, but that this was not true of the poorest students of all—represented by the lowest 10 percent of the samples. Yet in the United Kingdom, at least, this exactly is the area which concerns those who talk about the reading problem, the problem of reading failure. I think I know why this particular result was forthcoming. I believe I can demonstrate that the real problem of young children in learning to read is the one key question—how can letters represent meaning. This key question the i.t.a. experiment never asks and certainly never answers.

I must finish by reference to the other major problems. If it has been established that children learn to read i.t.a. quicker than t.o., what about the second stage of the exercise? Once they can read i.t.a. with facility can they transfer to reading t.o. (the end product that the i.t.a. experimenters declared they were interested in producing)—can they become good t.o. readers and that quickly? In the early days of i.t.a. the problem of transfer was regarded as a minor one. Transfer, it was suggested on some rather shaky evidence, would prove to be easy and natural, as "natural" and easy as learning to read i.t.a. is to a skilled experienced reader of t.o. Here, at this crucial stage, laboratory experiments would have been invaluable.

One minor laboratory experiment I did with four-year-old children seemed to suggest that there were likely to be problems of transfer unforeseen by the designers of the Initial Teaching Alphabet itself. For example, it was assumed that the "chay" sign would easily be seen as a combination of *c* and *h*. In fact, these young children tended to see chay as *t* and *h*. There were other warnings about problems of transfer, but they tended to be brushed aside at the early stages.

The results of the experiment, however, show that the problem of transfer is by no means a minor problem. The results showed that the i.t.a. group had t.o. word recognition test scores at the beginning of their third year (half of them had by this time transferred to t.o.) inferior to what they achieved on the same word lists in i.t.a. Taking only those who had transferred to t.o. four months prior to this testing, the children earned mean scores on t.o. tests which were inferior to their mean scores on i.t.a. tests. It became clear that the process of transfer does create difficulties, a slowing up and perhaps even repression on a scale that was unexpected.

In transfer a new set of skills has to be learned, and they are not, it would seem, automatically acquired "once fluency in i.t.a. has been established." I hasten to add that after three years, however, i.t.a. groups were reading rather better than the t.o. groups in t.o. tests, though the difference now is not anything as dramatic as the difference shown at the earlier stages before transfer. Clearly, transfer from i.t.a. to t.o. is a much more complex process than had been realized at the early stages, which to me is another indication that laboratory studies would have been a valuable beginning to the experimental use of i.t.a. on a full-trial scale.

There are many, many more fascinating things to say about the findings of this important investigation carried out by Dr. Downing and his coworkers. I can do no more than commend for study *The i.t.a. Symposium,* with its carefully documented research report and the searching criticisms of so many educational experts, I commend particularly the contributions of Sir Cyril Burt and Professor MacKinnon. Hunter Diack (*3*) issues a timely warning about the general conclusions to be drawn from the i.t.a. experiment: "If we accept the most favourable statistics put forward by Downing, the most we can say is that children taught to read by means of an i.t.a. version of 'Janet and John' readers made better progress than comparable children taught by means of the 'Janet and John' readers in the normal t.o. version. That is to say, children taught by means of a series of readers which does not recognise the alphabetic principles at the earlier stages of reading do not progress so well as compared with children taught by the same readers transcribed in such a way that nowhere are they remote from the alphabetic principle." Diack goes on to ask whether this means that any children taught by means of i.t.a. books will be superior to comparable children taught by means of books in t.o., and suggests that the answer must be "No." I agree wholeheartedly.

What we need to know, amongst many other things, is the answer to the key experiment that as yet has not been carried out.

What would happen if two groups of children were taught using phonetically graded material—graded naturally in i.t.a. and by design in t.o.? All the indications are that under these circumstances t.o. would show a certain measure of superiority, and that it would be particularly true of those children whom one would expect to experience some difficulties in learning to read.

We shall not have to wait long for this question to be answered definitively, but this comment goes to the heart of the real question about how children learn to read—and here I cannot, and must not try to, develop this argument. I believe that the whole i.t.a. experiment ignored the one central problem which we all know, as researchers or as teachers know, from our day-to-day experience. The problem is not so much the medium, rather it is the *method*. When we grasp that nettle as firmly as we have grasped the i.t.a. problem in this magnificent experiment we are going to be surprised by what we can achieve in the future in the whole area of the teaching of reading. The i.t.a. experiment in Britain, at least, has set reading research on the right road—in scope, in size, and in cautious interpretation of the meaning of experimental data.

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Reactions to Using i.t.a. in Beginning Reading in Great Britain

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I should like to express my appreciation to Dr. Downing for his elaborate and thorough investigations of i.t.a. in beginning reading in Great Britain. He is to be commended for the persistence and ingenuity he exhibited in this field study, which is the first of its kind and scale in the United Kingdom. After five years of practical searching for concrete and detailed evidence, he has presented concluding statements that are cautious and conservative.

After studying the Downing research report, I should like to center my comments on the humanistic aspect—the people involved. I should like to look first at the children and then at the teachers. What consideration was made of the children's different learning abilities and special needs before the reading instruction began? When the children arrived at school, were assessments made of their sensory patterns or avenues for learning to read, to write, or to spell? Snygg and Combs (*12*) remind us that "our hard-pressed society is in acute need of a much better understanding of human nature and human needs." Downing (*2*) mentioned the consideration given to such variables as age, sex, social class, nonverbal and verbal reasoning, urban or rural location, school organization, school size, pupil-teacher ratio, and physical environment in the school, but no mention was made of modality strengths and weaknesses.

As we know, some children absorb information easily through the visual pathways, while others learn more effectively through auditory channels. Were their modality preferences, such as the visual or auditory, considered for learning language skills? Were all the British children visually competent to discriminate abstract words? Psychologists remind us that children learn slowly when identifying critical features in a given configuration. Some children with weak visual ability may not have trouble recognizing individual letters, but can be handicapped when letters are grouped. If the children were strong in auditory discrimination skills, were they successful in this visually-oriented, whole-word plan? *The i.t.a. Symposium* (*2*) shows marked advantages for the audibles, motiles, and the more intelligent children, but the merits are doubtful for the visualizers, the dull, and the backward.

Did all the children have fine motor control so as to have little difficulty in managing a pencil? As early as 1937 Orton (*8*) drew attention to "psychomotor lags in children with reading and spelling disorders." In a recent research study Hirsch (*5*) reports that the graphomotor ability showed a fairly high correlation with reading and writing two and one-half years later. As a motor activity, such as name writing, is associated with reading competence, so any motor weakness could affect reading performance.

In this country we are finding that a diagnosis of modality strengths and weaknesses is helpful in indicating the learning style or the particular pathway that the child can use best. Such a differential diagnosis can be provided by the Illinois Test of Psycholinguistic Abilities (*6*). This test detects the child's perceptual and linguistic assets and deficits so that individual learning plans can be made. Such findings must be considered before the reading instruction begins.

Hirsch (*5*) advocates that exploration of modality strength and weakness has "more than theoretical interest and should largely determine teaching methods." Her predictive index is recommended for valid predictions of achievement in reading, spelling, and writing. Her research report shows that this prediction can be made by evaluating children's perceptual, motor, and language behavior at early ages. The index, a simple battery of tests, can be used by schools to identify before the beginning of first grade those children who present a "high risk" of academic failures and who are more liable to fail in mastering the skills of reading, writing, and spelling. Such identification would be invaluable in planning specific help for each child, who has his own gaps and lags, his strengths and weaknesses. In this way the instruction could be geared to the child's ability to learn.

Obviously, when the teacher meets very young children, she is faced with a tremendous task in choosing the teaching methods. Without diagnostic information about their different modalities, should she be at liberty to select for them and choose a medium, a method, or to mix the methods? The i.t.a. study reported that the teachers were allowed to teach as they had taught in previous years. Should they have done so? The great Swiss educator, Pestalozzi (*9*), said in 1802, "Thus to instruct men is nothing more than to help human nature to develop in its own way, and the art of instruction depends primarily on harmonizing our messages and the demands we make upon the child with his powers at the moment." Is it feasible for a teacher to use one approach for *all* children? The teacher should respect the children's variations and strongly question the use of one medium for all children.

In considering the second part of the humanistic aspect, I should like to discuss the teacher. Were the teachers well-informed and skillful in using i.t.a.? Was there any teacher training? If not, can we say that the only change was an introduction of a new kind of print or a simplified alphabet? Soghomonian (*11*) said, "Innovations will not produce better teachers or better students unless the innovation comes from within the teacher." If the teacher did not like the medium, did she learn to adjust to its use and give the necessary psychological support for each child's achievement? Were any behavioral changes observed? No doubt she had children who were already familiar with the traditional alphabet in books read by older brothers or sisters. How did the teacher react when faced with a child who presented a letter from Grandmother and obviously could not read it? What was her attitude? What answer was given when on field trips the children inquired about street signs or billboards not written in i.t.a.? Fay (*4*) emphasized that the relation between teacher and pupil is better than any method. How did the teacher relate to the children? Did her personality affect the assurance of the pupils in the classroom?

At this point I should like to comment on the three conclusions of the British experiment and ask a few questions. In the first conclusion, we find that t.o. is a serious cause of difficulty in the early stages of learning to read and to write. From neurophysiological and psychological studies, we infer that unevenness in developing modalities is a cause of difficulties. It is logical to believe that the central problem is not the medium, not the alphabet, but the lack of assessment of each child's modality strengths and weaknesses. To meet these differences as revealed, the teacher should use diagnostic teaching.

In the second conclusion, we find that i.t.a. generally leads to superior t.o. reading and t.o. spelling by the end of the third year in school. From the word recognition test scores, which showed the most effective gain, I assume that in a majority of the cases there was control of the structure of the word forms and patterns. However, there is more to reading than recognizing printed symbols. Reading is a meaningful process. Was there equal emphasis in the meaning phase of reading? Was there concern for critical thinking? How did i.t.a. benefit comprehension? This part of the i.t.a. research report is not clear.

In considering the third conclusion involving the transitional stage, we observe a plateau or even regression in growth of literacy skills at the end of the third year. Naturally we ask why. Downing (*3*) offers an answer after discovering a weakness in the alphabet. He plans to seek the sources of "pro-active interference in individual letters." Another answer comes from Plattor (*10*), who is confident that "when transition is made and it is necessary for the child to learn a new set of handwriting symbols, a new reading task presents itself."

At this point I strongly question the use of a code that is to be abandoned two and one-half years later. Does it appear to be poor economy of time and learning? With setbacks in a child's developmental reading program, could we not expect changes in the child's attitude toward himself and reading? McCormick

(7) says that "learning to read is not nearly as important as what the child reads and the attitude he develops toward reading." With setbacks, I should like to ask if the children were any better off?

We recognize the i.t.a. study in Great Britain as an interesting exploration of new ideas for teaching beginning reading. Other intensive studies should follow before final conclusions are reached. Until all evidence has been gathered and processed, I believe it is necessary to determine which plans are best for children with specific learning characteristics.

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Experience has shown through the years that there is need for caution in adopting ideas in the teaching of reading. It takes time to assess properly the permanence of initial success. Often the very process which facilitates initial success has been found to inhibit adult rate of comprehension. Therefore, in reacting to the preceding presentations, the writer will dwell on unanswered questions suggested by the authors.

1) Does t.o. "cause" difficulty? Dr. Downing has said one must come to the "incontrovertible" conclusion that traditional orthography is a "serious cause of difficulty." The fault with t.o. may well be in the methods traditionally used rather than totally with the orthography. The success of the language-experience approach would seem to justify withholding judgment until there is more evidence. If concern for spelling could be delayed and a language-arts approach used, with emphasis given to the expression of thought, it is possible t.o. would not "cause" problems. The principles of teaching and learning championed by Downing in this paper are appropriate with any orthography.

2) Is i.t.a. a tool or a method? It is difficult to understand how Dr. Downing can continue to compare i.t.a. with t.o. now that i.t.a. has become "an idea." When first introduced through those lovely youngsters reading about the "caterpillar sitting on the sycamore tree," i.t.a. was labeled a tool which might be used with any method, but gradually claims are being made beyond that which are reasonable for a tool. As an alphabet, i.t.a. is more consistent in its sound-symbol relationships than is t.o. Although not strictly phonemic, the compromises were deliberately contrived to make transfer to t.o. easier. If method has become a basic consideration, it should be remembered that any study of method is complicated by the fact that teachers *vary* considerably in the degree of implementation of one method. Research evidence supports the thesis that teachers are not always aware of the differences in methods they are actually using. It is important now that we separate the many factors which are inherent in experimental situations from those gains attributable to the alphabet itself.

3) What are the facts concerning the extent of use of i.t.a. in Britain? One lecturer says it is "spreading rapidly"; the other says "a sizeable number of infant schools who took up i.t.a. with enthusiasm have now abandoned its use." If schools are abandoning i.t.a., we need to know the reasons. Daniels suggested, in addition, that more schools would abandon i.t.a. if a considerable amount of money were not involved. He polled eighty teachers in his class and found ten teachers using i.t.a. and ten additional teachers who *had* used it and given it up.

4) What is the magnitude of the transfer problem? In the final analysis, we must equate the value of faster initial success for the majority of children with the extent of the transfer problem. Distinct advantages would have to lie in the psychological value of early success to offset the disadvantage of "teaching for transfer."

5) Are the graphic characters of i.t.a. as presently used the best possible representation for easiest transfer? It would seem that the "armchair graphemes" could be improved upon with the accumulated knowledge of the trouble spots of struggling children. Both speakers suggest that there may be other and more effective systems of simplifying English orthography for beginning readers.

6) If we accept a highly phonetic orthography in one dialect, what is the effect upon children with widely differing dialects? Will there be a residual tendency to "sound out" words as so often happens with t.o. phonetic systems? Publishers would be unable to supply simplified orthography materials for all dialects, which would mean the child would have to translate into his own dialect. The problem intensifies as we consider the changing nature of language.

7) Why is i.t.a. of less value to the low achiever? Daniels reminds us that i.t.a. has not proven to be the boon to remedial programs that it was hoped it might be. We must know why this "simplified, regularized orthography" does not help those who need it most.

8) Of what significance is the effect on the teacher in teaching with the i.t.a. in experimental situations? Has the effect of the excitement of teaching something new been realistically eval-

uated? What effects have the new method, the books and equipment had on the teachers? It seems fair to assume that the amount of attention i.t.a. classes have received has added special impetus to the teacher's day. The extra training and time the i.t.a. teachers received from supervisors does not appear to have been given to the control groups in all experiments. The publication of early positive results of the i.t.a. experiment may have influenced subsequent performance by teachers. Of special interest is the extent of the effect on the teachers of being freed from the psychological and pedagogical problems connected with concern for spelling errors. It could well be that the real value of i.t.a. may be in the effect on composition and expression.

There is much to learn from the apparent success of i.t.a. Although all children do not succeed in learning to read easily with i.t.a., a sufficient number have had a degree of initial success which requires careful study to determine critical variables. We need assessment of the uniqueness of i.t.a. in light of our long-term goal of producing adults who read and enjoy reading.

APPLYING STRUCTURAL LINGUISTICS IN BEGINNING READING

Vital Principles in Need of Application

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THE CONTRIBUTIONS of the science of linguistics to the field of reading instruction are chiefly in the areas of decoding symbols into sound and structure, and decoding sound and structure into meaning. These are two of the four major areas recognized in the reading process, two additional ones being the interpretation of meanings and their application to or integration with other ideas.

Because these contributions affect directly only two parts of the four-part process, one of the first facts we must observe is that these linguistic contributions are a part, not the whole, of our concern in teaching reading. And because they are only a part of these two parts, we should further modify our consideration of them. In other words, if we drop everything we have ever done about teaching reading and do nothing but what the science of linguistics suggests, again we sin in the direction of an extreme; and it is perhaps by extremes as much as by our mistakes that we do less well than we might in teaching children to read.

At the outset let us admit that children are reading better now than their parents did at their ages, better than their older brothers and sisters. The norms of reading tests are having to be revised because the average child in a particular grade level now is getting a higher raw score than his predecessor did a few years ago.

At the same time, we must not be overcome by vanity in this achievement. We are only one possible factor in it. Another tremendous factor is the greater stimulation of the modern environment, the greater opportunity to develop concepts, which are the *sine qua non* of reading comprehension.

The twenty-seven cooperative studies of different beginning reading programs showed that the quality of teaching made more difference than the method used, a finding widely viewed as proof that no one method is the best answer. But a little more thought brings still another conclusion: that perhaps each program in its individual way misses perfection by the same degree though not in the same respect; all hit the target, but none hits the bulls-eye. This is a sorry thought but not unexpected, since we are still pioneering in the reading field, still fitting pieces of the jigsaw puzzle together, still agreeing or disagreeing on interpretations of insufficient data.

In applying linguistic knowledge to the teaching of reading, we must distinguish between linguistic knowledge and methods used by linguists in teaching language. It is a temptation to adopt both the knowledge and the methods; yet it must be said in all honesty that while linguistic knowledge is a product of rigorous scholarly endeavor, methods of teaching language range from ancient to modern, reflecting more of logic than of psychological soundness.

We are fortunate that some linguists have departed from their major role of information-getters, to become material-producers; but we must not forget that, while we are not in a position to view their knowledge critically, we are in a position to assess the wisdom of their teaching procedures and sequences, and perhaps to improve upon them.

We should distinguish also between methods of teaching the spoken language and methods of teaching the reading of that language. Imitation and memorization are important in the acquisition of speech patterns. The reading process involves retrieval of these acquisitions and keen observation of relationships, to recapture the author's thought and reflect upon it. Thus, while speaking and reading may share the same language, they are not identical processes. What is good for one is not necessarily good for the other.

Our objective is to teach "book English." We have to add spoken book English to the child's speech patterns and sounds before we can expect the child to read and understand book English. This is not to say a little; it is to say a great deal; for every child in our society is to some extent a foreigner to book English. Since there is some research to support the idea that the age of seven is an optimal age at which to add a language, we should probably press forward in kindergarten and first grade, if not before, to prepare the child for this addition. And since the characteristics of the child's home language, which make the learning of book English difficult, are different for different children, diagnosis of the differences between the home language and the book English sounds and patterns must take place prior to instruction and, in some respects, along with it. Otherwise, we shall continue to build a superstructure upon a foundation which cannot support it.

Language experience charts are one of the approaches to reading which can preface and accompany a reading program. If the child says, "Wannagome" for "I want to go home," some teachers faithfully reproduce this language on a chart, following the imperative that the child must feel his language is respected, and that he must see his language written exactly as it is said. If, however, another principle is added, that the child should be taught book English as efficiently as possible, teachers may wish to delay dictated charts until these can be useful models of reading materials.

Probably the most important of all principles to teach children is the relativity of language.[7] Consider the relativity of sounds: the *b* in *battle* as compared with the *b* in *cab;* the *o* in *not* as compared with the *o* in *note;* the *th* in *this* as compared with the *th* in *think.* One has to inspect the word as a whole before one knows whether the *th* is voiced or unvoiced, and then he knows only because he has heard these words before—if, indeed, he has. Consider the effect of context on the word *bear,* the possible meanings of "*Now you've done it.*" The sounds assigned to words and letters and the meanings of words and larger units of composition are modified by their environment. To learn them in isolation is to learn them only in part; is, in fact, to misrepresent the task of reading them.

Children need to learn both the fact that letters are assigned certain sounds according to their positions in a pattern and that some letters are assigned variable sounds within the same or a different framework. The *c*'s in *circus* are controlled by the vowels which follow them, to yield the *s* or *k* sound. The *tear* we shed and the *tear* in a garment have no structural reason for their difference, only a meaning reason. C. C. Fries has suggested that children should see what different words they can produce by putting different vowel sounds between consonants. The p-l pattern becomes pal, pel, pil, pol, pul; pale (pail), peel (peal), pile, pole (poll), pule; powl, paul, poil, pull, pool. This can be a creative exercise for the child, not a ready-made teacher-patterned ritual. Variations in spelling for the same sound can become an impressive discovery.

Phonics and blending

Phonics, as we know it, was suitable in the last century because we did not have the linguistic knowledge to warrant a different procedure. We taught that letters said a certain sound, in spite of the fact that most of our letters are either variable in sound or unpronounceable alone.

In some languages each consonant letter is a pronounceable unit, carrying a vowel sound with it. In Hindi, for instance, the letter *m* is actually an *m* plus a schwa sound (*muh*) unless a separate vowel is attached to change that condition. So, in Hindi, it is perfectly proper and possible to sound consonants separately. But in English this is not the case.

The vowels in English are produced in a flow of air. The consonants initiate or interrupt that flow and are not audible without it. Thus the vowels *a*, *o* and *i* are the only letters that appear as single words in our language. When we require children to say or even whisper the consonant alone, we are misrepresenting the language to them. So we must decide to what extent we can afford to misrepresent these conditions in initial instruction, or whether it is wise at all to do so. Certainly we take a good deal of trouble to avoid misrepresentation of mathematical truths in beginning arithmetic, and science truths in beginning science. What if we should decide not to misrepresent the language in initial instruction in reading? It could be done, but not by i.t.a. as it is now taught, or by some of the other systems in which we have invested funds and loyalties.

Because we have had a letter approach to sounding words, we have invented a blending problem. Children learn the sounds to associate with certain letters, according to our instruction, but have trouble putting them together into a pronounceable whole. In fact, many good and poor readers alike prefer to discover the identity of strange words by other means.

At recurring points in our history we have insisted that *c-a-t* should be blended as *c-at,* at other times, as *ca-t.* Thus we have produced *cuh-at* and *ca-tuh,* neither of which has ever been known to sit on a fence and howl.

Now we need to look at the facts of our language. The vowel in *cat* affects both the *c* and the *t.* (The word *car,* with its *r* controlled *a* shows such relationships even more clearly.) The child who would attack this word successfully must know that the *a* gives the *c* the sound usually associated with *k,* and that a vowel between two consonants in the same syllable is usually short. So he derives a short *a* from the *a* of the word. He raises the back of his tongue against the soft palate to produce the initial *k* position, and immediately switches to the flattened tongue, short *a* position; then finishes by bringing the tip of his tongue to the final *t* position against the gums behind the upper front teeth, if he has any. If he hasn't lost all of his wind, he has produced *cat;* and he has done it without the addition of a schwa sound prior to the short *a.* Readiness activities for sounding out *cat* include aural and oral practice in hearing and saying the short *a* sound in varying combinations.

Future generations of teachers may know that the blending problems of the twentieth century and earlier were due to faulty pedagogy, but not unless we change what we are doing. Probably many defensive arguments will be raised for the old way, to maintain the comfort of the customary instead of the customer; but in the end we may have a sounder sound system.

Attention and confusion in language learning

And speaking of faulty pedagogy, we frequently have violated the principle that learning is most effective when attention is greatest. When we teach the association of a sound with a letter, the point of greatest attention should be the point at which this association is observed. But frequently we have *told* the child the sound, and have merely asked him to find that letter in other words and pronounce them with that sound in them. He can go through these motions with any sound we give him, but that is no assurance that he will remember which sound he made for which exercise. If we want to impress the child with the association, *his* pride in discovery and *his* attention should be invested, not just ours in telling him what we know. If, further, he keeps his own record of what he has discovered, he will not only remember it better but will have it to refer to for review. Typically, the only record is in the teacher's head.

A favorite habit of language teachers is to group together things that are much alike: letters, words, and sounds. *M* and *n* are so much alike, teach them together, they say; the same with the words *take* and *bring*, because of their common burden; and *t-h-e-r-e* and *t-h-e-i-r*, because of their common sound. Speech therapists know better than this. They establish one learning and after that, another; and only after both are well known are they brought together, with reduced chance of confusion. In beginning reading instruction, words grossly different in form, sound, or meaning can more easily be learned together. And we are fortunate that the natural language of children contains many grossly different words and varied sentence forms.

The reading process: the decoding of symbols into sounds

Now let us turn to the reading process itself, to see what insights we can gain for a beginning reading program. Suppose the author wants to convey these simple thoughts:

The deer met the bear.
The deer had antlers.
The deer lowered his antlers.

These sentences are of the type N V N (noun, verb, noun), have a common subject, and make pretty dull reading. The author combines these ideas into one sentence, and he does it in such a way as to give importance to the *way* the deer met the bear.

The deer met the bear with lowered antlers.

The phrase *with lowered antlers* is in a typical position of an adverbial expression. With luck, it will be no reflection on the bear.

The decoding of symbols into sound involves the following if the words are not known as sight words: The child must choose the voiced form of *th* in *the*; and, seeing the consonant beginning the next word, give the final *e* the schwa sound. In *deer* he must realize that *ee* yields a long *e* sound modified by the presence of the final *r*—the hooked long *e*, as Webster calls it—the *e* with the second heroin shot. *Met* is the closed syllable, short *e* situation. The *ea* in *bear* could produce *beer, bare, burr,* or *bar*. Nothing but the realization that this is the fur-bearing bear, and an auditory memory of its name, can save the reader here. *With* has the short *i* of the closed syllable. Its *th* is voiced or unvoiced, depending on the part of the country it is voiced in. The *ow* in *lowered* could be long *o* or *ou*. If *er-ed* are recognized as variant endings, the *low* is stressed, and the *er-ed* becomes *er'd*, not *ert* or *ered*.

Antlers contains two syllables, having two vowels. The first vowel in the closed syllable is short, and the second is modified by *r*. The *s* in the final position following *r* has the sound associated with *z*. The stress is penultimate, and the child may luckily guess this, mistaking *-er* as a variant ending.

Of course, if the child knows some words by sight, or recognizes some parts, such as *low, ant,* and the *s, er,* and *ed* endings, he shortens the process of decoding. One purpose of the controlled vocabulary is to reduce the burden of decoding symbols into sounds; another is to make a few words very familiar to the point of rapid recognition; and a third is to help the memorization of words which are not regularly spelled.

The reading process: the decoding of symbols and sounds into structures (syntax)

While the reader decodes the symbols into sounds, he is also noting the structure of the sentence and the role of each word, phrase, or clause in it. If there were more than one sentence, he would be noticing the relationship of one sentence to another, in the presence of pronoun referents and structure words.

In the sentence we are using as an example, *The* is a noun determiner. *Deer* could be an adjective, but *met*, followed by another *the*, suggests that *deer* is the subject and *met* is the verb. *Deer* can be singular or plural, and *met* does not give a clue as it might in present tense: *deer meet, deer meets.* You can imagine what *deer meet* would do to a bad speller in this situation.

If the child knows that *met* is past tense, he knows that the sentence refers to a completed act. The *bear* must be another noun, the thing acted upon, because it follows *the* and is followed by a function word, *with.* The *ed* ending of *lowered* suggests a verb form, and, after the preposition *with,* must be an adjective. *Antlers,* with its *s* ending, following an adjective and preposition, must be a noun, a plural.

A child who knows the English language represented by this sentence can catch the clues to order (the typical N V N pattern), the noun determiners (*the—the*), the suggestion of time (*met*) (*lowered*), and number (*antlers*). A child who does not know any English that uses articles and variant endings in an expected order needs a great deal of support from the listening and speaking areas of the curriculum before he is ready to read a sentence like this. Even with a good English background, a child could not tell whether *deer* was singular or plural. He would have to seek a clue elsewhere in the composition.

The reading process: the decoding of meaning

Besides being able to decode the symbols into sounds, and into expected word groupings, the reader must decode the meaning of what he is sounding out. When the author writes *THE deer,* the reader must, as Lee Deighton has said, "hold in abeyance" his decision about the number of deer until he gets a further clue. *Met* looks simple but may refer to action or stance. Does it mean that the deer *faced* the bear, *approached* him, *reacted to* the sight of him, *touched* him or *rammed* him? The bear is the one that got the action, from one or more deer, some time in the past.

If the reader does not know what a deer is, what a bear is, what their attitude toward each other is, what their weapons are, what their food is, he cannot sense the situation. It may as well be *The icks met the oiks.* You see the tremendous role of concepts and the wisdom of dealing as much as possible with familiar concepts in beginning reading, when the struggle with symbols is so great.

We sophisticated readers take *with* for granted, but *with* has different meanings. To fight *with* enemies is to fight *against* them. To part *with* them is to part *from* them. So *with* is a word to watch. The position of *with* after *bear* may suggest that it introduces something characteristic of the bear (the bear with the bad foot), or the way he is doing something (with caution), or something he has (with the honey), or a reference to time (with no delay). But here is a bear with lowered something: eyes? paws? self-concept? No, antlers.

If the reader knows who is wearing antlers this season, he knows that the *with* expression refers back to the singular or plural deer at the first of the sentence. And because the sentence order was not *The deer with lowered antlers met the bear,* the reader suspects that with lowered antlers isn't the normally jaunty way the deer wear antlers these days, but a special stance in honor of the bear.

Coming back to the meaning of *met,* let us suppose that a sentence preceding the one we have analyzed said:

> The bear and deer approached each other slowly.

In this case, *met* suggests action. But suppose the preceding sentence said, instead:

> As the deer started to raise its head from the salt-lick,
> it saw a bear approaching.

Now, the *met* is stance. The antlers are already low. Or, suppose the sentence had been:

> The picture showed a bear and deer in a meadow.

Now both animals are stationary, and there is no time difference or movement.

The reading process: interpretation and application

Surrounding sentences give added dimensions to sentence meaning, requiring some awareness of the thought patterns the author is following. The deer lowered his antlers *because* of the approaching bear. We have a cause and effect relationship without benefit of a clue to the reader in the form of a word like *because*. Or, in the description of the picture our preceding sentence *describes* the situation (a picture), and the second sentence tells a *detail* of it. One might expect an additional sentence offering another detail.

In any case, the reader has to go beyond what he has sounded out and structured out, and what he knows of the meaning of what he has read to interpret and apply what he has gathered. Why would a deer lower its antlers on sight of a bear? Does the reader generalize *threat* from *stance,* and see that the deer is a threat to the bear and the bear to the deer? Both are now motivated by fear. Perhaps they just happened upon each other and have reacted in surprise. What will happen next? Why?

A good reader anticipates beyond the sentence he is reading. Furthermore, he applies the information in some ways, and perhaps philosophizes. Would a deer ever attack a bear? Or vice versa? Am I sometimes afraid when I need not be? Mike McClintock's *A Fly Went By* is a good follow-up for this matter of unwarranted fear.

The reading process versus logic

The reading act is not a logically sequential act of first decoding sound, then structure, then meaning, then interpretation, and then use or integration; it is rather an act of interplay among all of these. We don't sound the whole sentence before we utilize clues to structure, sense some possible clues to meaning and relationship, formulate hunches about the total meaning, and see possible applications of this meaning to past and future ideas. Only linguistic analysis uses such logical sequence. What is good for the analyst is not necessarily good or normal for the reader.

A baby is lucky that it has no teeth. Otherwise an analyst would come along with chewing exercises, forbidding the flow of saliva until chewing had been perfected; then with salivating without chewing or swallowing, and finally swallowing without chewing or salivating; all this without benefit of something worth chewing, salivating, and swallowing.

Does this sound like the program that first teaches sounds associated with letters until all are memorized, then patterns of letters within words until the child can manipulate them, then one sentence pattern at a time until all patterns are mastered, and finally something in the natural language? Does it sound like the program which first teaches sentence reading, then whole words, and finally the letter-sound associations?

Does it sound like the program which teaches all regularly spelled words first, and only later the ones which defy phonic solution?

We have all been using one or another type of logical approach—fragmented approach—in attempting to teach something that does not behave that way. Because we have discovered components, we have ordered them unnaturally and are serving them to children in unnatural sequences. So it was that some reader series served consonants in the first grade books and vowels in the second, causing the child to wait a whole year before he could sound out a whole word, and causing parents to panic. The most useful consonant-vowel combinations could have been presented first, but this did not occur to the logicians who designed the program.

An important principle to recognize is that logical organization is something to be *achieved* by a learner, not *imposed* upon him. The linguist loves his field partly because he can make discoveries about its logical relationships and its vagaries. The child should have this same privilege of discovery.

Logically, some linguists believe that the child's initial reading material should contain only regularly spelled words. Other linguists believe that the child's natural language should be used. Unfortunately these two ideas are incompatible. But it is possible to use the child's natural language and to have a parallel program of exercises using some of the same words and emphasizing form and nonsense.

Again, logically, some of us have thought that word analysis had to be based upon words which the child had in his sight vocabulary. This meant that sight vocabulary had to precede analysis. Others disagreed: letter sounds thould be learned first, then words. But neither really had to precede the other. All that was required was for the child to be told what two words said, so that he could hear their common sound and find by sight the letter making that sound.

All of the elements in the reading process, and all of the skills and understandings and attitudes required in these elements, must be present in the initial reading program, unless we wish deliberately to misrepresent the reading act and establish habits which must be broken. And even though we do not value the completeness of the reading act at every level, surely we must consider the children who are disturbed if they have to learn sentences or words entirely as wholes, or children who do not have the auditory discrimination to approach reading successfully through the phonic mode.

Final statement

We are in a stage of transition. Perhaps we always shall be, as long as we and the language live. But I believe there is great hope for a better reading program, a greatly improved one, if we try to put together in a mutually beneficial relationship some of the ideas which have divided us.

Why should a child read a whole year before he can sound out a word? Why should he have to sound out everything? Why should all of his beginning reading be nonsense? Why should it start with mimicry? Why should it be entirely his own language? Why should it rhyme as nothing in English literature rhymes, to the distress of comprehension? Why should a child learn initially, in the same lesson, words which are confusing in form? Why should consonants precede vowels or vowels consonants? Why should we blend when we can bend?

The answer is that we have all been viewing the reading process from different angles and letting logic and custom blind us to the natural conditions for effective learning.

Now we have the new linguistic evidence. We have much information on the ways in which learning takes place. We have the language of children all around us, and a wealth of children's literature. Something better than we have ever achieved is just ahead.

Practical Teaching Suggestions

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A SMALL BOY once boasted, "I have the smartest dog in the world. All I have to say to him is, 'Are you coming or aren't you?' and he either comes or he doesn't."

If we used just one method of teaching beginning reading we would, in effect, be like this small boy. We would be saying to children, "This is how I teach reading. Are you going to learn, or aren't you?" And they either would or they wouldn't. But primary teachers use many different approaches to reading, all of which are successful with some children. Our concern is that all children find success in reading. Teachers are discovering techniques for using certain linguistic knowledge to help us toward this goal.

Linguistics is a scientific study of the nature and functioning of spoken language. To say that we use a linguistic approach to reading means that we take advantage of certain knowledge and insights accumulated by linguists. Since reading is a language-based process, it is a logical approach. Applying linguistic principles in teaching beginning reading helps children find true enjoyment in discovering the versatility of their own voices. It helps children have fun in looking at language in many different ways. It also provides means for skill development.

Capitalize on the language he brings

In his study of children's language Dr. Walter Loban found that all children, regardless of cultural or socioeconomic background, had acquired the basic structures of language before entering first grade (*7*). The child may say "He don't want none" instead of "He doesn't want any," but he is in full control of his language system as he learned it in his home and neighborhood. His dialect may not be that of standard English, but if we hope to help him succeed, we must make him feel accepted first; and to make him feel accepted, we must accept his dialect. He may say he had "corn pone" and "clabber cheese" for lunch, or that he stayed home from school because he "ketched cold" (8), but no matter what "different" words he uses, if we reject these differences, we are also rejecting him, his family, and his community. Donald J. Lloyd, in his search for what is applicable to instruction in literacy (6), says that change of dialect will only follow the child's decision "to make his way out of the world he was born to."

Before children learn to read we must help them understand the relationship between talk and print. First, however, teachers must realize that written language and spoken language are seldom the same. Almost any sentence can help us prove this point. Try reading the following one aloud:

> My dad lost his job because he got picked up by the cops.

Now pretend you're telling someone what happened. The sentence probably sound something like this:

> Mə Dad lost'iz job 'cuzee got picktup by thə cops.

Words become blended together and sound as one. Some sounds in words are omitted entirely. Teachers are apt to become upset and say we are encouraging careless speech habits. They may even insist that children pronounce every sound and syllable of a word in reading. Then we have an artificial situation such as the one described by Ethel Strainchamps in her autobiographical sketch, *Don't Never Say Cain't* (9). She grew up as a hillbilly in the Ozarks, but became an avid reader at an early age. In telling of her experiences with language at about the time she was in the third grade, she says, "I had by that time picked up the notion that there was not necessarily much connection between the way teachers expected you to pronounce words in oral reading and the way they were pronounced in real life. Teacher speech in general struck me as a special lingo, lying somewhere between book language and normal speech."

It seems that much confusion could be avoided if we follow the advice of Dr. Lloyd (6) when he says, "In any event, each person must at all times read his own speech off the page of his standard English print and put his own speech on the page when he writes."

It is important for the very young child to learn that print is talk written down, that the written symbols can be read, and when they are read they become talk again. He learns this by watching his teacher write his own spoken thoughts about an experience, a picture, or maybe just a feeling. If he has a great deal to say, his teacher may listen, and then ask him to tell her which part of his story he would like to have her write. Then she writes his exact words whether they come up to her standards or not. Her purpose is to show him that his own talk can be written down and read back.

A little six-year-old boy dictated this thought to his teacher (*4*):

HURTING

It doesn't hurt no place when I'm sad.
I just know I'm sad.

It must have taken courage for the teacher to leave it alone and let it be truly his. But would it, honestly, have improved the thought if she had changed one word of it?

Use his sentence patterns

Children who are of school age already use the common basic sentence patterns of American English in expressing themselves. We can take advantage of this in teaching them to read. In an activity period the teacher may overhear some children talking about the new pet rabbit. One says, "Floppy is soft." Later, when children come together for a group discussion period the teacher says, "While you were working I heard Billy and Jack talking about our bunny. Billy said, 'Floppy is soft,' " and she writes the sentence on the chalkboard. Then she allows each child to say the sentence, substituting a different word for "soft." Each time she writes the new word like this:

Floppy is soft.
white
furry
little
wiggly
new
shiny
clean

The children have said, seen, and heard eight sentences, each in the same pattern, each with a different meaning. They could then substitute appropriate words for Floppy, arriving at sentences such as these:

The kitten is soft.
My dress is white.
A puppy is furry.
Johnny is little.
A snake is wiggly.
My coat is new.
Our car is shiny.
The floor is clean.

By means of similar exercises children soon learn to expect certain kinds of words in particular positions in sentences. They learn to read sentence patterns and note the differences in meaning when words are substituted.

Sentence stretching exercises can help children vary sentences, which will prepare them for reading longer sentences. Dr. Loban told how one teacher used a clothesline and pinned word cards to it to form a basic sentence pattern, like this:

Bob ran

By asking children,

Where did Bob run?
When did Bob run?
How far did Bob run?
Why did Bob run?

the teacher was able to help them stretch their sentence to sound like this:

Today Bob ran all the way home to see his puppy.

Yet the basic pattern can still be seen and heard in the sentence.

Develop his intonation patterns

Some linguists have called intonation the melody of speech. Dr. Lloyd (5) offers the hypothesis that "the ability to relate the melody of speech to the written page is the key to good reading. Good readers do it. Poor readers don't do it."

This statement is supported by Dr. Loban's study. He found that groups who were high in language ability were also high in reading ability, and that these high groups were likewise superior in handling the intonation patterns of pitch, stress, and juncture (7).

Dr. Lloyd reminds us that children entering first grade know intonation as far as oral language is concerned. It is so much a part of them that they are not consciously aware of it. Their sense of the more obvious intonation contours of their native American English was established before speech fluency developed, and refinements have been taking place ever since (5). It is intonation which can give a different meaning to an utterance, distinguish sarcasm from praise, tell us to push some words together while cutting others apart, and mark the end of a sentence or phonological unit.

Linguists can be very technical in describing intonation patterns in varying degrees of pitch, stress, and pause. It isn't necessary for the reading teacher to make such fine distinctions. What is necessary is to help the child become consciously aware of the principal intonation patterns of his language and to be able to use them as he reads.

A rule which we all must understand is that normally there is only one major stress from the beginning of an utterance to a pause, or between pauses. When a word or syllable is stressed, pitch normally rises unless it is the final word before a pause, when pitch normally falls.

Nó |↘|
I'm nót going |↘|
I've seen that show befóre. |↘|

Shifts in stress can change meanings in sentences and in certain words. Note this example:

After the kitten drank the *contents* of the saucer, it was *content.*

Open juncture, which cuts off one word or syllable from the next, works with stress and pitch to give meaning to this sentence:

The Greens, who own the *greenhouse,* live in the *green house* on the corner.

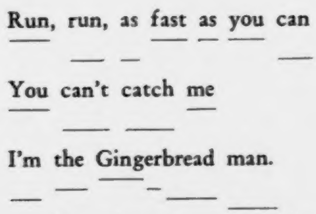
Open junctures also make the difference between words like *ice cream* and *I scream; a name* and *an aim.*

A reference which can help teachers learn more about the intonation patterns which are helpful in teaching reading is chapter five in Dr. Carl Lefevre's book, *Linguistics and the Teaching of Reading* (3).

Let's turn our attention now to the six-year-old. How can we help him become aware of the intonation patterns of his own speech? I think we must first let him hear in our speech what we call "stress," and "pitch," and "pause," pointing them out one at a time. For example, we can ask him to listen to simple directions, tell us the word with hard stress, and then follow the direction.

Bring me a book.
Put the book on the table.
Bring me a red book.
Go open the door.
Please shut the door.

After children have heard a favorite story the teacher may choose particular phrases which have been repeated over and over, and ask children to use their hands to show the ups and downs of her voice. To illustrate, take the refrain from *The Gingerbread Man*:



Run, run, as fast as you can

You can't catch me

I'm the Gingerbread man.

To help children realize that changing the stress within a sentence can change its meaning, ask them to say the following sentence with stress on different words.

You said I could feed the rabbit.

Yoú |↗|	Who said so?
You sáid |↗|	Please keep your word!
You said Í |↗|	Not someone else.
You said I coúld |↗|	Now you say I can't.
You said I could féed |↗|	Someone else can clean the cage.
You said I could feed the rábbit |↘|	Someone else can feed the bird.

I like to put each word of a sentence such as this one on a separate card and distribute the cards to children in random order. Children must arrange themselves so their words make a proper sentence. I designate a word to be stressed by holding my hand over the head of a child. Children discuss the different meanings they have voiced.

To show how pitch and stress indicate mood you might ask children to show how their mother calls them to dinner:

When she is just letting them know dinner is ready.
When she has already called twice.
When dinner is getting cold!

The tape recorder is invaluable in helping children hear their own intonation patterns. Record examples of their oral reading and help them compare these with recordings of their informal talk. This helps children hear the differences between their intonation patterns in reading and in talking.

Before we leave intonation, I would like to point out some pitfalls which must be avoided in teaching. We sometimes tell children that a question mark indicates a question and calls for the voice to end in rising pitch. Note the following examples:

What is the name of your school? |↘|	Barlow.
How much did your new hat cost? |↘|	Ten dollars.
Where did you put my pencil? |↘|	On the table.
What are we having for dinner? |↘|	Steak and salad.
Do you like ice cream? |↗|	Yes.
Are you going home? |↗|	No.

We can help children by leading them to make the generalization that questions requiring a "yes" or "no" answer usually end in rising pitch. Others normally fade and fall at the end.

Words in a list for drill purposes are seldom pronounced correctly, as each word receives a heavy single word stress. This encourages children to be word callers without any understanding of structural patterns or meaning. I would avoid excessive isolated word drill.

Punctuation marks in print indicate a pause. All pauses are not signaled by punctuation, however, and children should be taught to recognize this. They must learn to associate automatically the punctuations of their own speech with the graphic representations of language.

Teach him the words

It is important that children develop skills in word recognition. Charles Fries, in *Linguistics and Reading*, outlines some specific principles which he says take priority. He says that because written words consist of sequences of letters from the alphabet it is necessary for children to learn to recognize the letters by configuration and name (*2*). Some educators believe that we have sufficient evidence to support this.

Some of the most difficult words for children to learn are those the linguists call structure words. They are the words which make up nearly half the Dolch list of 220 most commonly used words. They are such words as *that, this, who, how, in, on,* etc. These words should not be taught in isolation, but always as they function in the language. Some structure words consistently receive weak stress in sentences. *A* and *the* are structure words which tell us a noun will follow in the sentence. I doubt that a preschooler has ever heard them as separate words. If he is taught to read them in phrases, as "a boy," "a dog," "the cat," we can avoid the mispronunciations they are often given in reading.

Teachers are concerned that children learn phoneme (sound)-grapheme (symbol) relationships in order to be able to decode words. Linguists and educators have called attention to the irregularities of these relationships in some words. Examples are: *come, sure, shoe,* and *again*. Very many American English words do, however, fall into specific spelling patterns. Examples of the three most common patterns follow:

1. consonant—vowel—consonant
   bat bit bet but
   can pan fan ran

2. consonant—vowel—consonant—e
   same game lame
   hide side ride

3. consonant—vowel—vowel—consonant
   heat bait
   feed road

Fries identifies groups of words which fall into subpatterns of each of the three main patterns given (*2*). Regular spelling patterns are being used predominantly in several sets of linguistic readers currently on the market. Controlled vocabularies are used to present sentences and stories composed of words of the same spelling pattern. There is not agreement among linguists as to this approach. Some of them questioned Leonard Bloomfield's method as outlined in *Let's Read* (1), and these newer approaches appear to be very similar to it.

We do know, though, that children need to learn the common sounds represented in words by letters. We know that we cannot teach them in isolation without distorting the sounds. We know how difficult it is for children to blend together separate sounds to make words. Try saying the sound of the letter *b* alone, and it sounds like "bu." In blending the sound of *b* with *at* to make *bat* the child says "bu-at." He still doesn't know the word *bat*. By teaching spelling patterns we can avoid this. We can teach consonant sounds by helping children hear similarities of sounds in words, and by substituting letters to make new words. We can help children know which vowel sound to expect in a word pattern. These techniques can be used as the child's reading progresses and meaningful opportunities for teaching arise.

Some conclusions

We have examined some of the ways certain principles from the science of linguistics can be applied to the teaching of beginning reading. These principles involve the patterning of language. They include sentence patterns, intonation patterns, and word patterns. We have given examples of some specific teaching procedures which we feel can help children read with fluency and understanding.

Success can come to teachers using these techniques if they have developed insight into some of the basic structures of language. Certain erroneous concepts must be dispelled and a more realistic view of spoken American English accepted.

Some attempts have been made to write linguistic readers for children. Very little use of our knowledge of sentence patterns and intonation patterns is seen. It is in these areas especially that we feel the resources offered by linguistics are being neglected.

The science of linguistics is relatively new. Educators have only begun to ask, "What's in it for us?" We must accept the challenge of this new knowledge, and through experimentation, select that which can help us gain our objective—success and enjoyment in reading for all.

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Reactions to Applying Structural Linguistics in Beginning Reading

Discussant: WALTER T. PETTY,
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No sensible person would argue that linguistics, structural or otherwise, has nothing to offer reading instruction. He would be less than sensible, however, if he did not also recognize that the *what* from linguistics and the *how* are still frustratingly vague. Certainly to hold that there is value in some so-called linguistic approaches for teaching children to read is not properly recognizing that we know little of the what and how.

At this point in endeavoring to apply linguistics to the teaching of reading, we need to be debating—even arguing. This we are doing, and I have no doubt that we will continue. While this is better than simply attempting to swallow what has been dished out to us by, generally, well-meaning linguists, debate will achieve little unless the issues are closely defined and held to, elements that often seem to be missing from our educational disputes. There is simply no value in arguing without proper background, without defining the problems, and without securing some evidence that is related to these problems.

With Dr. McCullough and Dr. Irvin I am interested in searching linguistic knowledge for those things which may be useful to reading programs. With them, too, I am against the jumping-on-bandwagons incorporating into programs of the latest panaceas. We should all be against the kind of incorporating that does not seek what appears to be genuinely useful. Beyond this, we should all be against incorporating even what seems to be useful without proper experimentation, and experimentation that has real relevance to the instructional problems we have and not to some mythical ones.

There does seem to be a grasping at the knowledge gained by linguistic scientists, though perhaps this is at only the straws of it, merely for the purpose of injecting something into the reading program. One reason for this feeling is the fact that dozens of articles published in the last decade or so have included statements to the effect that new discoveries in linguistic science should be incorporated into the language-arts curricula at all levels. Another reason is that there are some persons, some organizations, and some publishers who do not appear really interested in relevant experimentation, or in experimentation at all, before putting before the teacher something that is new. They seem to feel that since linguistic knowledge has been gained through rigorous scholarly effort, this knowledge surely is of value to school programs, ought to be taught to children, and that children should become junior linguists themselves.

At this point it appears to me that linguistic knowledge has much to offer the reading program, but that its value lies largely in what it offers teachers rather than in what it offers as a system, method, or approach. Too many teachers have simply been too insensitive to language, too misinformed about it, and too inclined to be rigid and unthinking about its uses and limitations.

Certainly misinformation about language and the way it works has been, and is, reflected in materials constructed to aid in teaching pupils to read. Certainly, too, some misinformation about language, as well as misinformation and shortsightedness regarding the learning process, is in evidence in the suggestions provided teachers in basal and other reading instruction materials. However, as Professor McCullough has so clearly stated, the substitution of a "linguistic" reading program for reading programs as they have most recently existed is also applying misinformation and is equally shortsighted.

"Pat a fat cat" or "Jump, Pud. Jump, Zip. Jump, jump" are surely no improvement over "Oh, Oh. Look, look."

Also, the evidence is surely substantial in supporting the belief that much of the stilted language used by children in their oral reading is a result of too much emphasis upon oral reading in the sense of simply saying the words, a routine and purposeless activity that results from losing sight of making reading a worthwhile and appealing activity. It appears to me that a great deal of the so-called linguistic emphasis upon oral reading, of bringing to the conscious level of children many of the technical aspects of intonation, will do equally little toward motivating them to learn to read or toward making readers of them.

Too much can be made of "book English" and the fact that it may differ from the language the children use. All forms or varieties of English are far more alike than they are different—and the differences ought to be minimized—as they are, by and large, in the adult world. Charts do not have to be written in the precise ways that children say the words and sentences (no one really knows how to spell some of the pronunciations anyway). A child can see "I want to go home" (spelled and written conventionally) and still say "Wannagome." Where we get into trouble is in having him isolate the words for pronouncing, a difficulty that exists even with children who use "standard" dialect, since pronunciations are not the same for words in isolation as they are in context (nor are they the same in all contexts).

Good teachers have not been teaching that a letter "says a certain sound," nor do they have children "sound" consonants in isolation. It is true, however, that we have always had some teachers who have done both, but reputable reading materials and authorities have long held sound views concerning the error of such practices—views which were held prior to the current linguistic flurry.

The principal point made by the speakers at this session was that of Dr. McCullough in stressing the importance of attention. This needs to continually be re-emphasized.

The factor of readiness for instruction at the various levels, as suggested also by Dr. McCullough, is extremely important too. Further, readiness is a factor about which too many linguists have shown a great deal of naïveté. Readiness in the sense of the experience background the learner brings to the reading act cannot be emphasized too greatly, as elementary school teachers generally know. Readiness with respect to the vocabulary to be met and the skills the pupil has learned must also be recognized if reading is going to go beyond simply saying words.

As to the sentence pattern exercises suggested by Dr. Irvin, I fail to see that they have much to do with reading. There is a good possibility, however, that such exercises might be helpful in giving instruction in written composition, although at present this is largely speculation.

Discussant: MARGARET BIERBAUM,

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Although tests show that children are reading better than their parents did at the same age, and although during the past few years producers of reading materials have issued an unprecedented variety of wares, teachers still have in their classrooms children who do not read well and others who do not read nearly as well as they might.

The most widely used method of teaching beginning reading is the basal reader approach, the foundation of reading in America for the past thirty or forty years. It will probably remain the most generally accepted method of teaching reading for many years to come in the majority of American schools because its carefully controlled presentation of vocabulary and its sequential development of reading skills give teachers (especially new ones) a sense of security. Of the twenty-odd other methods that are currently being used to teach beginning reading, the linguistically-oriented approach, which has gained momentum in recent years, would appear to synthesize the best elements of several fundamental systems.

It is fitting that the linguist should work with the reading specialist on common problems inherent in the teaching of reading. The linguist, with his knowledge of the nature and functioning of human language, can provide many worthwhile language concepts—such as new ways of looking at the structure of our language, information on the histories of words, and how the meanings of words have changed through the ages.

Linguists have also provided teachers with an understanding of basic sentence patterns. When a student says, "I like to play," and the teacher says, "Let's substitute other words for *play,*" with the children responding with sentences like "I like to *sing,*" "I like to *eat,*" and "I like to *run,*" the children are learning about sentences of similar patterns with different meanings. When the teacher gives her students "sentence stretching" exercises, wherein she puts on the board a sentence like "Jane ate," and the children "stretch" it to read "Yesterday *Jane ate* her lunch in the cafeteria," the children are getting practice in finding the basic sentence pattern within the framework of a longer sentence.

When the students study sentences such as

I am walking to the store today.
I *am* walking to the store today.
I am *walking* to the store today.
I am walking to the *store* today.
I am walking to the store *today.*

they are discovering "stress," the quality of speech that gives different meanings to the same sentence.

Linguists have informed teachers about "intonation," which for teachers of young children primarily concerns the pitch which, as Dr. Irvin has pointed out in her paper, normally falls at the end of a sentence and rises at the end of questions that require a "yes" or "no" answer.

One of the first linguistically-oriented methods for teaching beginning reading was introduced more than twenty years ago when Leonard Bloomfield removed a copy of his system from a file drawer and handed it to Clarence Barnhart. Dr. Bloomfield felt that, since the methods used in schools were not scientific and ignored the fundamental study of language, a linguistic system of reading would be of great value. His method, which he felt should be studied exactly as outlined, was based on matching letters with sound, but it differed from the traditional phonetic approach in vogue at the time.

His system involved regularly-spelled words presented in a systematic way that would trigger an automatic response. Picture and context clues were not used, and the prime motivation would be the success that came to the student from calling a sound or word correctly.

Emphasis was placed first on learning the alphabet and then on decoding the printed symbols, using only words that had a fixed relationship between sound and spelling. For example, the student learned the sound of *an,* and then all of the words that had that particular regular spelling pattern. He next met the *at* words, then the *ad's,* the *ap's,* the *ag's,* the *an's,* and so on—presented in every possible order and combination. The short *i* would be presented next, then the short *u,* short *e,* and short *o,* the whole approach dealing with regularly spelled words with similar pronunciation.

The child exposed to the method learned to distinguish each word when he saw it; he learned to say the right one when the teacher pointed to it; and he had to point to the right one when the teacher pronounced it. There was absolutely no writing of the words; and no word was introduced (no matter how necessary it might be to the continuity of a story) that did not fit the pattern. (The word *ate* was not introduced until Book 7, for instance.)

The phonetic system on which this method was based goes back a good many years, and Dr. Bloomfield's chief contribution was the working out of a mammoth schedule involving the introduction of words in rigid patterns. The whole system was based on purely automatic responses, with all guessing and memorizing eliminated.

The method, as described in the Bloomfield-Barnhart book, *Let's Read* (*1*), has been used effectively with certain children. (Bloomfield died in 1949 and the book is now edited by Clarence Barnhart.) It was employed with a heterogeneous group of students from grades one through three in a Chicago school in 1966, with good results.

It was used more recently with a group of retarded third graders in a private school in New York state. The children followed the program as outlined, learning the alphabet and the prescribed series of words. There were no failures, since each child remained at a particular level until he had mastered it. Eventually, after he had learned to associate the *f* sound in *fat* and the *an* sound in *can*, and had combined them into a new word, *fan*, he felt a sense of accomplishment. One must remember, however, that in this case the teacher was working with retarded readers on a strictly individual basis, something which is impossible in a regular classroom.

Teachers have also used the Bloomfield method successfully with illiterates, but the motivation of those students is far different from that of the average student whom the teacher finds in her classroom.

Since few other experiments have been documented, up to the present time, it is difficult to ascertain the specific value of Bloomfield's method.

To me, the "pure Bloomfield" method is flawed by the lack of attention given to comprehension, interest, or meaning. The children read unrelated, uninteresting things like "A cab ran in a rut. Did Sam cut up? Gus had a fig, but Sal had a yam." This is not reading, but rather a decoding process, and indicates that what is effective for the linguistic analyst is not necessarily appealing or motivating to the reader. One very retarded junior high school student who was taught by this method when all else had failed said, upon reading the no-sense sentences, "This finally makes sense to me!" However, most children would not accept those sentences as rewarding reading.

The oral identification of the alphabet, the reading of lists of words, compiled only because of similarity, can be extremely monotonous; and the lack of an interesting story—with the customary picture clues—can prove stultifying to the child, especially since there is no help if he fails or forgets. This, of course, is no reflection on the work of this brilliant pioneer, and Dr. Bloomfield's outstanding work has been improved upon in the natural course of events. One must keep in mind that linguists, although possessing special knowledge, are not able to apply it *in toto* to other disciplines, specifically the problem of teaching. Perhaps the linguist's most pertinent contribution will prove to be the presentation of the reading process in terms of the language development of the pupils, since the ability of a pupil to read must invariably be measured against his language ability.

Recently, Charles C. Fries in *Linguistics and Reading* (*2*) incorporated many linguistic concepts in his study of how beginning reading ability can be acquired more readily through a better understanding of the phonetic patterns of words. He does not ignore meaning, of course, and maintains that there must be a meaningful progressive response to words, then sentences, then sequences of sentences.

Dr. Fries, in collaboration with Rosemary G. Wilson and Mildred K. Rudolph, within the last decade has devised a very promising basic reading program (*3*). It is scientific in nature, simple in application, and was tested in classrooms over a period of years before being promulgated.

Dr. Fries believes that a child can read only when he can respond to the written representation of the oral language signals he already knows, and when he can automatically supply the intonations, stresses, and pauses that are proof of comprehension. Therefore, he and his coauthors developed a series of reading texts and accompanying skill books, which help the teacher to evaluate both the pupil's comprehension of material read, and his mastery of spelling patterns.

Like Bloomfield, Fries started with the teaching of the alphabet, both in upper case and lower case letters and with the letters in isolation. No *sounds* were taught with the letters. He emphasized the study of words that are similar in spelling, like *mat-fat, mat-man,* and *mat-met,* in carefully ordered succession as the most effective means of teaching word recognition.

Unlike Bloomfield, Fries introduced in his texts a limited number of sight words that did not conform to the spelling patterns being developed at the time, but which were necessary to provide reading material with normal sentence patterns. Those words, however, were not included in the spelling lesson, since the emphasis was on regularly-spelled words.

Fries excluded pictures from the textbooks in order to direct the attention of the pupils to the reading matter itself. He also felt that pictures furnish clues that lead the pupils to guess at words. Pictures were included in the skill books, however, but there the teacher guides the student in the reading of words, phrases, and sentences *before* the pictures are introduced. The pictures, therefore, serve to check on comprehension. Unlike the Bloomfield material, Fries' texts contain enjoyable, interesting stories that take into account the different backgrounds and levels of maturity of the pupils.

> Little Sam was just seven. He was in Miss King's room with Pam. He ate in the same lunchroom with Dan and Pam. He had the same books they had. He played the same games. But Sam was not happy in school and he was not happy at home.

This is about as interesting a selection as can be constructed with a limited vocabulary.

Dr. Fries does not use nonsense syllables, since he feels that there should be complete "meaning" responses by the child, not only to particular words, but to those words in complete sentences. There is also no discussion of "long vowels" or "silent *e*" at any time. As suggested in the Fries skill books, the pairs of words (like *hat-hate*) are written on the chalkboard, side by side, and the differences in each pair, first in pronunciation and then in spelling, are indicated. The rule, that an *e* at the end of the word often makes the vowel long, need never be taught. The children are taught to "see" the difference from the patterns.

Fries includes writing in his reading program, the spelling-pattern approach being presented in written form, which is an excellent way to provide children with an informal spelling program. Since each student can spell the words he is reading, he can progress easily from writing short sentences dictated by the teacher to creating his own sentences. Progressive exercises that develop written expression skills are included in the series.

Dr. Fries maintains that all reading books should use language which the child already knows, words and sentences that he uses and understands when others say them. If the child thoroughly learns words in patterns, he can read *any* words that fit that pattern. The whole idea of "patterns" is as important in beginning reading as it is later on when the student learns word and sentence patterns in descriptive grammar. Meaning should be emphasized from the very beginning, since reading at every step should be within the oral language of the child and must develop as his experience widens.

Since all reading methods involve mutual borrowings, perhaps a synthesis, involving the experience story (with the accompanying acquisition of a sight vocabulary), plenty of free writing, the reading of easy material, work on word meanings, with form and picture clues, may be the best way to introduce reading at the present time, especially if the whole program is coordinated with a good linguistically-oriented approach as propounded by Fries.

This is similar to Dr. McCullough's recommendation in her preceding paper—that we should "use the child's natural language" and "have a parallel program of exercises using some of the same words and emphasizing form. . . . "

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Programed Instruction and Automation in Beginning Reading

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TRYING to find research in programed instruction for beginning reading materials is most frustrating. The main problem is that there is very little reported research. Hence, my plan is to tell you what I have been able to dig up and then make a few general comments about programing and automation in reading.

Programed instruction, since its very inception, has been long on learning theory rationalizations and heartwarming discussions but relatively short on hard-core data. A scholarly example of this is the current 1967 NSSE Yearbook, which is entitled *Programed Instruction* (*13*).

Buchanan Programed Reading

The biggest and best controlled study that has been done is one by Robert Ruddell at the University of California at Berkeley (*24*). It was one of the first grade studies sponsored by the U. S. Office of Education. In this study Ruddell used the Buchanan Programed Reading series in six classrooms and the Sheldon basic readers in six other classrooms. Two other groups of classrooms were getting special supplementary linguistic materials, but we will not concern ourselves with those.

The Stanford Achievement Test was given to all children. Ruddell reports raw scores for four of the five subtests related to reading. They were Paragraph Meaning, Word Reading, Word Study Skills, and Spelling. Of the four, probably Paragraph Meaning is the most important since it represents a nearly true-to-life reading situation, in which a student reads a paragraph silently and answers some questions about it. On this test the 132 children who had had the Buchanan Programed Reading scored 1.6, and the 132 children who had had the Sheldon basic readers scored 1.7. The difference between the two is not significant and, as you can see, they are both about normal for children near the end of the first year. Incidentally, these scores are just about the same as those obtained in other first grade projects in other parts of the country using other basal readers—i.t.a., DMS, and various phonic and linguistic methods.

In the Word Reading section of the Stanford, the programed reading children scored 1.8 and the basal reading children scored 1.7. Ruddell found this difference significant. I must hasten to add that Ruddell reported only raw scores, and I simply took his raw scores and followed the directions given in the teacher's manual to convert to grade-level scores. This is an excellent illustration of what Clark Trow was talking about when he pointed out the difference between educational significance and statistical significance (*31*). Here we see a difference of one-tenth of a year, which hardly any classroom teacher or experienced educator would consider significant in terms of the reading ability of two groups; yet by tests of "statistical significance" it is significant at the .05 level. It should be remembered that the statistical significance between means only tells us that two means that far apart could not have occurred by chance except five times in a hundred. It tells us nothing about the size of the difference between the two means. Classroom teachers, of course, are concerned with the size of the difference between the means. They want to know—does one method teach reading better than another method?

Another section of the Stanford is the Word Study Skills, which is a mild mixture of some phonics word attack skills. Pupils using both the programed reading and the basal readers scored 1.7. In spelling there was the same lack of difference; both groups scored 1.7.

A subsample of the same population consisting of about 44 students was given some individual oral reading tests. The raw Gilmore Oral Reading accuracy scores were 16.6 for programed readers and 17.7 for the Sheldon readers. On the Gilmore Oral rate score the programed reading students scored 46.8 and the Sheldon readers scored 51.8. Even though the differences seemed to favor the basal readers, there is a lack of statistical significance in the difference. There is also probably a lack of educational significance in the difference.

The subsample was also given a list of high frequency words prepared by Arthur Gates, and the programed reading children scored 11.8, while the basal-taught children scored 10.8—again, a nonsignificant difference. A statistically significant difference was found for a list of phonetically regular words which were read orally, with the programed children scoring 9.1 and the basal reading children scoring 5.4.

TABLE 1

PROGRAMED READING COMPARED WITH BASAL READERS AT THE END OF FIRST GRADE

(Data taken from Ruddell 1965)

Group Reading Test Means	*Buchanan Programed Reading*	*Sheldon Basic Readers*
Stanford Achievement Test		
Primary I (N = about 132 per cell)		
Grade Scores		
Paragraph Meaning	1.6	1.7
Word Reading	1.8	1.7*
Word Study Skills	1.7	1.7
Spelling	1.7	1.7
Individual Reading Test Means		
Raw Scores (N = about 44 per cell)		
Gilmore Oral Accuracy	16.6	17.7
Gilmore Oral Rate	46.8	51.8
Gates Word—Oral (Words not selected for phonic regularity)	11.8	10.8
Phonetically Regular Words Oral Reading Test	9.1	5.4*

* Ruddell found raw scores with statistically significant differences between means at the .05 level.

In summary, there does not seem to be much difference in the reading achievement of the students taught by programed reading and students taught by the Sheldon basic readers. The Bu chanan Programed Reading series does emphasize the phonetic regularity of words and uses a kind of a phonics or, if you prefer, linguistics approach, and this does seem to give the students some advantage in terms of reading phonetically regular words only, but this advantage does not show up on more important segments of reading tests such as comprehension of paragraphs read silently or in the accuracy and speed of oral reading.

Harry Silberman published a rather extensive review of the research and related theoretical articles entitled "Reading and Related Verbal Learning" in *Teaching Machines and Programed Learning II*, published by the NEA in 1965 (*25*). As part of this article he describes only one program evaluation of beginning reading that has any type of test results. This again is a description of the Buchanan beginning reading materials, which were used at Crittenden School in Mountainview, California. A remedial class of fifteen, first through fourth grade children, used the program for twenty-five minutes a day, five days a week for three weeks. They showed a mean gain on the Gates Reading Test of four months. Since this report has no other citation, presumably it was submitted to Silberman directly by the publisher or the author of the materials. This type of report is probably loaded with most of the errors that are to be found in any kind of educational research. First of all, it is unsigned and it was presumably done by the materials seller. Second, it reports on only fifteen students, which is too few to give much reliability. Third, there was no control group. Next, it lasted for only three weeks, which is certainly not enough time to use a standardized reading test and measure any gain at all (the standard error of measurement on most achievement tests for groups this size would be over three months). I do not deny that the Buchanan materials can teach reading. What I am saying is that little studies like this don't prove much. However, when you can get no other data, I guess you have to use what is available.

Talking typewriter

An interesting demonstration project has been carried out by O. K. Moore (*25*) with his "talking typewriter." This device is a special typewriter attached to something like a small computer. When the student presses a key, the machine says the name of the letter. It can also be programed so that if the student types a word, the machine says the word. Moore likes the term "responsive environment" because the student is allowed to come in and simply hit keys at random, listening to the letters. The environment (the talking typewriter) responds to the child's inquisitive little fingers and this, according to Moore, is the best learning situation. The ideal free choice mode, however, is shortly terminated for as soon as the machine tells him or shows him on a visual display a certain letter to hit and he learns to hit the correct key, all others will be silent and inoperative. In this manner the child is then taught to copy words and eventually sentences.

I have visited Moore's laboratory in Connecticut and have seen that children working with typewriters can, indeed, learn to read. However, the little boy they gave me to test, who was about four and reading on the third grade level, had an IQ of about 150. I would hesitate to generalize on a sample of one, but I must, in all honesty, say that I have never seen any studies reported by Moore which included intelligence tests. The next time I saw the talking typewriter was in a Harlem kindergarten, and after several weeks of instruction the children had mastered only three letters of the alphabet in a phonetic type of reading lesson. The type of children in the Harlem experiences carried on by Lessar Gotkin are certainly a far cry from the type of children that Moore likes to show off on television and in his films.

Gotkin did publish a smidgen of data to the effect that eight children who were exposed to nine lessons ranging in length from about 40 to 125 responses showed gains from 2.75 to 45.50 percent on a letter naming pre-test of the nine letters taught. Hence, there is some evidence that disadvantaged kindergarteners can learn slightly less than half of nine letters taught in nine lessons (*10*).

Other programed studies

Along this same vein, in the demonstration type of approach to teaching beginning reading, James Evans has reported that he taught one three-and-a-half-year-old how to read 218 short phonetic words using a Multi-Max teaching machine (*5*). Evans aided in the development of the program called "*Reading, a Programed Primer,*" published by Grolier (*21*).

Not all investigators of beginning reading using programed instruction believe in phonics. McNeil and Keislar used essentially a whole-word approach on a teaching machine, in which 40 everyday words were taught to 182 nonreading kindergarteners (*18*). The study was really an attempt to see if oral responses aided the learning of the words, and their investigation concluded that they did. The authors also suggested that oral responding aided the motivation of children of IQ's below 100.

A teaching machine was also used by Falconer, who conducted a study using eight deaf children who were about six and seven years of age. Using the machine for about five minutes daily for about two weeks they learned fifteen nouns (*6*).

Robinson, Weintraub, and Smith in their monumental collection of research findings in reading published annually in the *Reading Research Quarterly* report only two studies using programed instruction in the past two years (*22, 23*). In the first study, Blackman and Capobianco taught reading to nineteen mentally retarded youngsters using a teaching machine (*2*). They did not learn to read any better than seventeen equated students in the control group, who used traditional special class procedures. The second study was the Ruddell study.

Programed teachers

The studies we have reported thus far use material that is programed; that is, the student interacts with the material either in book form or on a machine with the teacher acting only as an overseer or, at best, a supplement to the instruction. However, Ellson, Barbar, Engel, and Kampwerth attempted to program the whole tutoring situation including the untrained teacher (*4*). In a little series of experiments and demonstrations some 400 children were taught to read. These children included groups of slow learners and retarded children, as well as normal kindergarten and first grade readers. They report only one "failure." Gains tend to be reported in cumulative curves after the fashion of Skinner and his pecking pigeons. The authors felt that their programed tutoring was most successful when it was used as a supplement to regular classroom teaching.

Perhaps at least a brief description of one of Ellson's experiments will give an idea of a type of programed tutoring. The tutor sits behind a wooden screen and holds up a word in a window. If the child calls off the word correctly, a light is flashed, meaning "correct," and the tutor shows the next word. If, however, the child does not know the word, the tutor places a picture alongside the word. If the student can now name the word with the help of the picture, the tutor removes the picture and sees whether the student can say the word without having the picture present. If the student cannot say the word, the tutor helps him to say the word correctly, then a new word is shown.

A similar kind of procedure of a human operated teaching machine has also been used by Statts (*26*). Only, instead of rewarding the student with a flashing light, Statts is somewhat more lavish with his reinforcement budget and hands out tokens which are exchangeable for toys.

Computer assisted instruction

From a programed tutor to completely automating the processes is but a short technological step. Today the letters CAI standing for Computer Assisted Instruction are becoming almost as well known as various other trigrams such as IRA, ITA, and SOB. The idea of putting tutoring, or at least the function of a teaching machine, into a computer has been with us since at least 1959, when Rath, Anderson, and Brainerd used a typewriter input-output station in the manner of a more or less traditional teaching machine (*20*). Hence, we can say that at its simplest, computer assisted instruction for an individual needs simply a typewriter connected to a computer. Of course, the type of decision-making process inside the computer can become extremely complex. The simplest type of procedure would be to ask the student to respond to a question or picture by typing in a word and having the computer tell him whether or not he had responded correctly. A slightly more complex bit of programing would not only tell him when he was correct but, when he was wrong, what the correct answer was. The next degree of complexity would be to try to understand his wrong response, and if egregious enough to refer the student back for review or remedial work.

Recently, a much more complex decision-making process, on the part of the computer, has been theorized and at least partially programed by such workers as Stolurow, Lewis and Pask, Glaser, Atkinson and Hansen, and Simon and Kotovsky (*11*). Atkinson and Hansen are interested in developing quantitative learning models that can be used to develop optimal instructional sequences and thus maximize learning.

Duncan Hansen in his article, "Computer Assistance with the Educational Process" in the December 1966 *Review of Educational Research* lists about a dozen universities that have active and ongoing CAI projects (*11*). There are at least three CAI projects that have beginning reading as one of their major emphases; these are the projects at Stanford with Suppes and Atkinson, the project at the University of Pittsburgh directed by Robert Glaser, and the project at Harvard directed by Larry Stolurow.

Most of the CAI projects related to reading have a good deal more input and output equipment than just a typewriter; for example, the Stanford project has for each of sixteen student's booths a picture projector, a cathode ray tube which functions much like a television tube, a light pen, a typewriter keyboard, a set of earphones, and a microphone. It is interesting to note that even the "boob tube" has been educated so that now it can accept feedback from the student. For example, the computer can display three words on the tube and ask the student to underline the word which would correctly answer a question given aurally. The student takes his light pen and underlines the word; then the computer tells him whether or not his response was correct.

I have not seen any results that say whether or not a computer can teaching reading better than a teacher in a tutoring situation or in a whole class situation. I have, however, seen plenty of reports about the expense of running a computer for instruction. Machine rental for just the equipment is very expensive and only feasible for research purposes. There is always the possibility, of course, that computers will become much cheaper, and with time sharing which allows a number of students to work off one computer, plus the economical connections that can be made between a classroom and a central computer using just telephone lines, it is not inconceivable that classrooms or at least remedial reading rooms will have some CAI in the not too distant future.

In the development of curriculum material, Glaser and his colleagues at Pittsburgh are working on a system known as IPI, which stands for Individually Prescribed Instruction. They have broken reading down into a number of skill-oriented tasks by an educational type of job analysis, and have used a large number of materials, such as a number of parts of the Sullivan Programed Reading. At present, IPI is more of a "systems approach" which uses flow charts and a number of individually assigned tasks to progress children through the reading curriculum. Once worked out, it is possible that a good bit of both the decision making for the "next step" as well as the actual curriculum materials, such as the reading paragraphs and phonics sounds and symbols, can be placed in the computer memory system.

Atkinson and Hansen have also published an article in the recent Reading Research Quarterly describing their CAI project in initial reading and giving samples of computer and student behavior (*1*).

Programed materials

The publishing industry seems to have taken some formal notice of programed instructional materials in reading. The 1967 edition of *Textbooks in Print* (*29*) has a section under Reading entitled Programed Learning. It lists nine different sets of materials. However, the bulk of the programed reading materials mentioned seems to be either the programed reading materials prepared by Sullivan Associates or the Lessons for Self-Instruction in the Basic Skills published by the California Test Bureau. (See list at end of References.)

The listing of the reading programed instruction materials in *Textbooks in Print* is probably not completely thorough or up-to-date, but it is a kind of objective measure of progress in the field. Earlier compilations of programs in all fields have been done by the Center for Programed Instruction that is now merged with Teachers College at Columbia University and by Carl Hendershot (*12*).

Not all programed instruction is at one extreme or the other; that is, it doesn't have to have a computer and it doesn't have to be just a book. Some interesting materials are being developed that use sight and sound or just sound. For example, Imperial Productions has developed a set of forty tapes which teach reading skills ranging from reading readiness up to third grade skills (*19*). Each tape has an accompanying four-page worksheet. The reading readiness tapes tell stories and ask students to do tasks similar to those found in traditional reading readiness workbooks. The difference is that no teacher is needed; the tape guides as many children through as are plugged into the listening post. For older students, for example, the stories are read by the student and then comprehension questions are asked orally, with the student writing the answers on his worksheet. After time has been allowed for the student to write his answer, the tape tells him the correctness of his response. Needless to say, with only forty short tapes to cover four years of reading instruction, this is intended as a supplementary program; but it does give some interesting thoughts to any teacher with a tape recorder who wishes to either purchase a prepared program or develop her own in conjunction with a set of printed materials.

A slightly more elaborate system is the Aud-X device developed by EDL, which displays words as well as reads them to the child. An interesting modification of the cloze technique that the Aud-X system uses is to tell the students a story orally, then the voice leaves out a word and the word is presented visually by the machine. Thus, the student is given semantic clues to help him read the symbol. The Aud-X has also a set of workbooks which can be used in conjunction with the machine so that the student is interacting by following directions given by the machine, such as circling a *yes* or *no* or writing a word in a space. After allowing for the student to respond in his workbook, the machine can then tell the student the word and show him the correct word on its screen.

Attitudes towards programed instruction

Teachers seem to be leery of machines and automation; perhaps of new devices in toto. Table 2 shows the results of a study done by Tobias on teachers' attitudes toward programed instructional terms. He found that such terms as "teaching machine" and "automated instruction" were the most disliked by teachers (*30*). Slightly less threatening were such terms as "programed text" and "programed instruction." But the teachers really felt more at home with terms like "flash card" and "workbook." Though this study was not done on reading teachers per se, presumably it applies to them equally.

TABLE 2

ATTITUDE OF FIFTY TEACHERS TOWARD PROGRAMED INSTRUCTION

(TOBIAS 1963)

Terms	*Mean Rating*
Teaching Machine	26.09
Automated Instruction	23.80
Mechanized Tutor	22.16
Technological Terms	24.13
Programed Text	30.31
Tutor Text	28.65
Programed Instruction	31.73
Programing Terms	29.94
Flash Card	31.77
Exercise Book	33.33
Workbook	33.78
Traditional Terms	32.97

(Maximum score 42)

There have been numerous studies done on students' attitudes toward programed instruction, though none specifically in the field of reading. A typical study would be the one by McGuigan and Peters which surveyed some four hundred elementary and secondary students and found that 55 percent of their responses were favorable toward programed instruction, 26 percent were neutral, and 19 percent were negative (*15*).

While the attitudes of teachers and pupils are important, there are forces outside the school which may be of great importance in the next few years. I would like to quote directly from a report entitled "Automation and Technology in Education" prepared after hearings by the Joint Economic Committee of the Congress of the United States (*27*):

> Educational technology is now a major field of corporate research and investment. It is not only the business equipment manufacturers who are involved, but a great variety of corporations, many of them among the giants, ranging from steel and chemicals to publishing firms, who are directing their efforts more to the burgeoning education market. One witness stated:
>
> "The American economy was built around the railroads in the last half of the 19th century, around the automobile in the first two-thirds of this century, and it will be built around education in the balance of this century."

This statement may seem a little strong, but one doesn't need to walk much further than the convention floor or to read much more technical material than the financial pages of the newspaper to know that there is at least some truth in it, and reading teachers had best be aware of this trend.

Conclusions

There seems to be plenty of evidence that programed materials and their technological neighbors of computer assisted instruction and talking typewriters can teach beginning reading. There is no proof, however, that programed instruction can do any more for beginning reading than regular classroom teaching or human tutoring. In fact, in the only well-controlled study we were able to find (Ruddell), programed learning and basal texts came out in a dead heat. Thus, the classroom teacher should feel free to use as much programed instruction or automated procedures as her temperament and budget will allow.

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Programed Reading

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PROGRAMED READING is primarily a basic text for kindergarten, first, second, and third grades, and remedial classes. It differs in both form and content from any other available reading materials. The programed form permits the child to make about one hundred individual responses during a half-hour reading period. He works with clear sentences which observe the patterns of modern spoken English, and every sentence is tied in meaning to an unambiguous picture. The sentence-picture combinations are divided into clearly defined "frames" or stimulus response units, each of which presents the child with a reading problem to solve. In order to make the necessary responses, the child must actually read each sentence and understand its meaning in relation to the picture.

The child also checks his own answers. He covers the answer column of the left side of the page with his slider; when he has written his response, he reveals the correct answer by pulling the slider down to a black line in the answer column. He thus receives immediate knowledge of the results. Each correct response reinforces his reading skills. Each problem solved gives him new insight into reading. The programed form of the course is designed to promote maximum interest, learning, and retention. Every element of the text is functional. The strong frame divisions are designed to unify the reading matter in each stimulus response area. Within each frame a meaningful and imaginative drawing defines the situation to which the text refers. The type face bears the closest possible resemblance to the letters which children learn to print. The program sets up a consistent relationship between each sound and the letter which represents it, so that the beginner is not presented with a bewildering confusion of sounds and letters. As a result, he learns to spell and print every word that he can read.

Programed Reading incorporates the findings of structural linguists, of experimental psychology, and programing into a skillfully written text which captures a child's imagination and delights him while he learns. Unlike a traditional textbook, a program isn't an author's idea of how a certain subject matter should be presented. It is a detailed record of the way in which a large number of students actually did learn the material in question.

A group of programers prepare the first version of the program before it is presented to children. In its initial version, which corresponds to the textbook which a single person or group of persons may write, it is submitted for criticism to teams of psychologists, linguists, reading specialists, and other programers. These specialists suggest that some frames be deleted, that others be expanded, and that original frames be inserted at various points. The original programing team goes over all the comments and rewrites the program returned to them.

The program is then tested on a group of children. The children's errors and comments on each frame are recorded. The next revision is made on the basis of the combined error rates and the comments for each frame of the program. This process is continued until a program is developed which leads to the desired behavior. A further requirement is that student satisfaction be very high, while the student error rate be kept low.

The experiments were initiated to find out what sort of text children would like. They were asked to select pictures of various types, persons, and things they would like to read about, and words that might be used to describe them. The children rejected the type of complicated picture used in most beginning readers. They preferred simple, cartoon-like drawings with direct reference for each noun and operations for each verb. They further demanded that each picture be closely linked in meaning to a single sentence, so that the reading matter was made meaningful. The children seemed to prefer a world of animals and concrete things in which they were the leading characters, characters by the way that were quite self-sufficient.

On the basis of these experiments a new child-oriented reading program was devised. It maintained the children's interest long enough to obtain an error rate and a series of comments for the first twenty minutes of work. From this point on, the program could be revised in the direction demanded by the children. They designed the pictures, rewrote the sentences, indicated where they desired responses, modified some stories, eliminated others, and often suggested new ones. They became the true authors of the final version of the program. The child's world which they constructed was quite different from the world created by the adults who had written the school textbooks.

From 1957 through 1961, Programed Prereading and Programed Reading were revised constantly. After every testing, each separate step (frame) was rewritten in terms of the student's errors and the comments of teachers, psychologists, linguists, and reading experts.

The initial experiments which helped in the development of Programed Reading began in 1957. Some linguistically oriented prereading and reading materials were presented on teaching machines to kindergarten, first, and second grade students. The machines consisted of tape recorders with spring-loaded switches. The students operated these spring-loaded switches by hand and worked in color-coded loose leaf binders. The initial project failed! The students were neither interested in the materials nor able to learn from them.

In an effort to find out what was wrong with our materials, we tested the effectiveness of other beginning readers. The children were not motivated to read with these texts and very little learning took place. The differences between the various types of texts were negligible. It seemed evident that almost all of the learning which took place in elementary reading classes was a function of the teacher. A resourceful teacher could get equally good results from any of the available texts. The texts themselves contributed very little to the learning process.

Our team of programers returned to the machines, determined to develop a text from which the students could learn. Gradually, initially inadequate texts developed into an exact record of the way in which a child learns to read. A child's world was constructed, in which pictures, the vocabulary, the stories, and all the devices of motivation were found to differ greatly from those previously used by the adults who write textbooks.

By the beginning of 1961 kindergarten and first grade students were being taught two years of Programed Reading in one year of time on a machine. It was decided that an adequate tool had finally been prepared for the teacher, and a series of classroom tests were initiated.

From 1961 through 1963 the program underwent two more years of classroom testing and revision. When used with the teacher, it was found much more effective than it had been on the teaching machine. The teacher motivated and tutored the students as no machine ever could. Psychologists and linguists continued to observe progress in the classroom and directed further revisions to the program.

In 1963 through 1965 Programed Prereading and the first three series in Programed Reading were finally published. The materials for Programed Reading are divided into three series. Each series consists of seven programed workbooks, with their accompanying hard-cover readers, filmstrips, and tests.

The prereading program is a simple plan for introducing the child to reading by acquainting him just with written symbols, then with the relationship of those symbols to the sounds of words. The teacher-centered prereading course is divided into three stages. Stage One teaches the letters of the alphabet. Under the teacher's guidance the children learn first to recognize the letters, then to print them. Stage 1 is not in programed form, but is outlined for the teacher in her manual. She uses alphabet cards and an alphabet strip which are furnished with the course. The students respond by making the letters, holding up letter cards that the teacher asks for, and by writing the letter.

Stage 2 is a complete oral program for the teacher. Using sound-symbol cards furnished with the course, she teaches the students that besides having names, letters also have sounds. The students then learn the sounds of the letters *A, M, N, T* and *I.* Here is a section from the teacher's script for Lesson One, which is entitled "The Sound of *A.*" "Here is a new thing to learn about the letters. Besides having its own name, every letter has its own sound." "What is the difference between reading and naming a letter." "If I want to write the word 'ant' what letter shall I write first?"

The teacher also has a complete script for Stage 3 of the prereading program. At this point the student starts work in the 128-page response book, which is entitled "The Programed

Primer." At first, he makes only one written response per page. He reviews the names and sounds of the letters presented in Stages 1 and 2. Next he learns that he can make words by writing letters together, and can read the words by saying the sounds that go with the letters. He learns to leave space between words and to begin a statement with a capital letter and end it with a period.

When the student reaches Side Two of the Programed Primer, he is making three responses per page, working in a fully programed form, and using a slider to check his own responses. But he is still completely under the teacher's direction. She shows him how to look for pertinent information on each page.

After the students finish the Programed Primer, they take the reading readiness test. Those who score 80 or higher on it start immediately with Programed Reading. Initially, only discriminatory responses are required. In the first frame the student simply circles the answer "yes." In the second frame he circles the answer "no." In the third frame he circles the expression "an ant." The first constructed response appears on page 6. By the end of the book, over 50 percent of the responses are of a constructive type.

Tests occur about every fifty frames through the book. There are eight tests in Book One. Whenever a discriminatory response is called for, the student circles the correct choice. Where a letter has been left out, he fills in a blank.

Let's go back for a minute to those who receive grades of less than 80. They take a supplementary program in the Primer and then work independently through the additional 128-page book entitled "Programed Prereader," which prepares them to work in Book One of Programed Reading. Some close reading is required to distinguish between "cats," "cans," "pans" in frame two, and "fans" and "cans" and "fans" and "pans" in frame four of a single page of the prereader.

Now the child is prepared to begin work in Programed Reading. (Parenthetically, some children will still need to be tutored through Book One because they still will refuse to work alone.) The genius of programing is that the learning is in the response and the manner in which the response is sequenced.

After the student has finished his first programed text, he reads three 64-page hard-cover storybooks. The first two of these, Storybook 1 and 1A, use vocabulary and sentence patterns that the student has just learned to read in his programed text. Storybook 1B uses the same sounds which the child has learned, but presents him with words that he has not seen before in either his programed text or his storybooks. The student, therefore, by the use of phonetic analysis, is able to read. These elements are combined to form exciting new stories. The four-color illustrations in the storybooks, like those in the programed text, are designed to correlate exactly with the words of the story so that there is a one-to-one correspondence between text and picture. In the first series of storybooks there is a picture on every page. There are seven books in the first series of programed text. By the time the first grade child is finished with Book 7, he has had thousands of reinforcements for the basic sounds of his consonants and short vowels. He has a reading and spelling vocabulary of 400 regular words. The original strong frame divisions which isolated each sentence with its corresponding picture are now giving way to consecutive prose passages. The passages in the hard-cover storybooks also increase gradually in length, but the later books in the first series still have a picture on every page.

Series 2 consists of seven programed workbooks, storybooks 8-14, 8A-14A, and soon-to-be-completed 8B-14B and test booklets, plus the teacher's guide to Series 2 and teacher's guide to test booklet and Webstermasters (spirit duplicator masters).

Programed Textbook 14 marks the end of the second series. At this point the students have mastered the sound classes traditionally classified as long vowels. Some are those which are ordinarily called double vowels and diphthongs and secondary sounds for a number of consonants. The cumulative vocabulary total has now reached 1,400 words. Far more important, the student's word attack skills permit him to generalize automatically to thousands of other English words. He has had an enormous amount of figuring out words for himself.

The vocabulary of the second series is large enough to permit the student to read and to help write short stories, descriptive passages, poems, and dialogues on scientific subjects. The frame lines have largely disappeared. The programing consists of carefully worked and faded words in a given sound class within the body of the text, followed immediately by frames which test both retention of vocabulary and total comprehension. The storybooks which accompany Series 2 contain full-length novelettes. Pictures alternate with pages of text.

With a much wider vocabulary available to the programers, the third series of Programed Reading contains an enormous variety of reading selections. Like the poems, plays, and short stories in Series 1 and 2, all of the readings in Series 3 are original with the authors and the children who helped rewrite the stories during testing. Books 18 and 19 contain the world's first programed novel, which is entitled "The Roundabout's Secret."

Programed exercises precede the introduction of the novel. On the upper half of the introductory page the programers work with the sound classes *ea* as in *bread, meant,* etc., contrasted with the sound classes *ea* as in *reason, leaders,* etc., which had been introduced in Book 15 and constantly reviewed up to this point. The lower part of the page represents the new words *chapter* and *title* and introduces how they are to be used in the following novel. Since the novel is continued to Book 19, the first five pages of the book are used to review the story.

In Books 20 and 21, the student reads and interacts with the great stories of the gods and heroes of Greek mythology. At the end of Book 21 the student can generalize over 25,000 words. He has read through materials dealing with geography, science, everyday happenings, and has become thoroughly involved by the use of the programed vehicle with all aspects of reading. He has thoroughly learned the sound-symbol system of English and is prepared to read any new word within his intellectual grasp. Since he has been enormously reinforced for teaching himself to read and spell he uses reading as a wonderful adventure.

USING MULTIMEDIA TECHNIQUES
IN BEGINNING READING

The Rationale of a New Visual-Linguistic Approach

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THE ENTIRE January 1967 issue of the *Phi Delta Kappan* focuses attention on the imminent impact on education of big business and emerging technology. According to the editor, this issue is intended to prepare educational leaders—intellectually, institutionally, and politically—to take full advantage of a new opportunity to improve education. In it there is discussion of such things as computer-assisted instruction, man-machine systems, teaching machines, talking typewriters, video tape, and closed-circuit television.

Within this challenging framework suppose we examine the makeup of the new Visual-Linguistic Reading Series, which capitalizes on such technological advances as the copy machine, overhead projector, and transparencies.

While this series has the usual readers—five for first grade use—in other respects, with word-introducers, story-introducers, programed texts, reading and listening tests, and a special linguistic structuring, it is unique. The Word- and Story-Introducers, in packet form, are for making transparencies for the overhead projector and have a wide variety of uses. Whenever possible, each new word introduced has a corresponding picture to illustrate its meaning. Each story is also introduced by a full-size picture to stimulate added interest in the reading to follow. Finally, the programed texts—four of them—provide added reinforcement for the words and word-sound relationships being learned.

As for rationale, the series is built around four major convictions, that a strong reading program should 1) minimize the initial difficulties in learning to read, 2) control the early formation of desired reading and word-attack habits, 3) meet a wide range of individual differences, and 4) heighten the teacher's effectiveness and position.

Minimizing initial difficulties

The first major consideration was to minimize, insofar as possible, the initial difficulties in learning to read. It was felt that initial success, more than anything else, would give added impetus to the pupil's efforts and result in maximum progress.

Unfortunately the chief difficulty seems to be the English language itself. The beginning reader is faced, for example, with the problem of learning as many as six different pronunciations of the single letter *a*, as in *man*, *baby*, *father*, *away*, *all*, and *any*. He is faced also with many different spellings of a single sound; for example, with the long *a* sound, as in *great*, *they*, *paid*, *play*, *veil*, *gaol*, *gauge*, and *eh*. Such irregularities pose major learning difficulties.

Some way of imposing more order initially to minimize these troublesome variations should, in theory, facilitate the early efforts markedly. The specially devised alphabet of i.t.a. attempts to do this, with each symbol having one and only one sound. Twenty entirely new symbols are added to 24 conventional letters, making a total of 44 symbols to represent 44 sounds. Another approach uses a system of diacritical markings, as most dictionary makers do. Still another approach depends on color coding. Such systems do establish an orderly one-for-one relationship between symbol and sound. But normal print is not i.t.a., diacritically marked, or color coded. It is normal traditional orthography that the child must learn to cope with.

In this series the desired one-for-one relationship has been achieved in a different way, by using what might be called "initial letter values." The words introduced initially are words in which all letters have one and only one sound. This eliminates the need of learning extra symbols or markings and has the advantage of keeping within the natural framework of English orthography.

A somewhat different way of thinking was necessary. Instead of thinking in terms of word repetitions, the focus in the Visual-Linguistic Series is on the repetition of *letter-sound values*.

Research on retroactive inhibition as well as the recent research by Skinner on extinction points up the crucial nature of structuring for peak learning efficiency.

For example, in the first book of the series, *Alphy's Cat*, of the sixty words introduced, all but four contain a short *a*. The significant figure is the number of times the regular short *a* is repeated—717 times in the 1,325 words in the first book. Add to that figure the repetitions from the related Word- and Story-Introducers, tests, and programed text, and the grand total is 1,787 repetitions. With this approach the beginning reader faces as simple a task as possible, his response to letters reinforced to the point of being almost automatic.

Once all the regular initial letter values are taught, with sufficient repetitions to make for thorough learning, there remains the problem of simplifying the move into supplementary materials and the eventual handling of the irregularities of the language.

Toward that end, the selection of appropriate irregular sight words seemed of key importance. Selection was based on research involving an analysis for 42 preprimers and 28 primers, the vocabulary of seven primary reading series, and words of high frequency from four other sources. This ensured as close a relationship as possible to other first grade materials, thus facilitating their use.

One other step was taken to simplify the move into other materials. According to a study by Johnson (*1*), 727 different words were introduced at the first grade level by the entire seven basic reading series studied, only 195 words appearing in five or more of the series. The Visual-Linguistic series capitalizes on a special linguistic orientation to introduce a vocabulary of over a thousand words, two or three times the size of the vocabulary of some basic reading series.

In these four ways—by establishing simple one-to-one letter-sound relationships, by providing extensive reinforcement of those relationships, by introducing as sight words those most likely to be met in other material at this level, and by building a more extensive vocabulary than usual—an attempt was made to minimize early learning difficulties and facilitate the move into supplementary reading materials.

Controlling habit formation

A second major consideration in shaping the program was that of controlling the initial steps through use of linguistic structuring with sufficient care to build desirable habits from the very beginning. Every experienced teacher of reading has struggled to correct bad habits that seriously impede a child's progress. These undesirable habits stem largely from the number of extraneous cues that may for a time serve as bases for successful word discrimination.

For example, if the first words taught happen to be of different length, length automatically tends to become the ingrained basis for subsequent word discriminations. Arthur Gates mentions that when children are given the words *cow, postman, dress, duck, football,* and *dandelion,* length was the most obvious basis for discrimination and the children relied on length for accurate differentiation.

If words of the same length are taught together, pupils are led to lean on other cues, usually on some outstanding detail, "as the dot over the *i* in *pig* or the 'funny cross' in *box,* the similar beginning and ending in *window,* and the monkey's tail on the *y* in monkey," to cite examples given by Gates.

Sometimes a child pays no attention to the word at all, but relies on pure memory for a word, phrase, or entire sentence. One look at a picture, a certain kind of print, or even a spot or smudge and the child has the necessary cue to "read." Donald Durrell tells of a child who read the word *children* on a flash card but could not read it in a book, insisting he had never seen the word before. When shown the flash card again and asked how he knew the word was *children,* he pointed to the corner and said, "By that smudge."

Just as the best research demands careful control of all important variables, so it would seem that the best initial reading instruction should demand equally careful control of the child's first learning experiences. Control of the first words taught would seem particularly important since those words play the key role in habit formation.

If the first words happen to be of different length, the child is thereby encouraged to depend on length differences. The initial success reinforces and sets such a dependence. But as the child meets more words, he becomes confused and frustrated because length cues are no longer effective. This suggests the desirability of starting with words of the same length, to keep the beginner from developing an initial reliance on an undependable cue.

While this is a step in the right direction, notice the new problem arising. Suppose that *pig, box,* and *man* are taught together, all words of the same length. This grouping tends to lead the child to look for a salient detail, perhaps the dot over the *i* in *pig,* the funny *x* at the end of *box,* or the two humps in the first letter of *man.* But dependence on such details also leads to confusion and frustration. They are no help later on, when the child must discriminate between *pig* and *big, box* and *fox, man* and *men.*

Additional controls are needed to build habits of reliance on the most dependable of cues—letter cues, those which can be counted on for most effective word discriminations. For example, if *am, at,* and *an* are introduced as a group, obviously length is not going to be very helpful. Since all three begin with the same letter, the child must look at the last letter in each word to spot the difference, the only basis upon which an accurate discrimination may be made. This kind of controlled word grouping forces more attention on letters, a step in building desired habits.

Notice, however, that such a word grouping forces attention on the *last* letter of a word. One other matter of particular concern should be built into the first discriminations, based on letter differences, and that is the establishing of a strong, positive left-right orientation so important in reading. When salient details are used for cues or when certain letters tend to stand out, unless there is sufficient control, attention is sometimes drawn to the first, sometimes to the middle, and sometimes to the end, of a word. This tends to keep the child from any particular orientation and fails to establish the desired left-right orientation.

For that reason, the early word groupings in this series are such as to demand attention to the *first* letter, not the middle or last. For example, when *bat, rat, mat, cat,* and *sat* are introduced as a group, the child must depend on the first letter for his discriminations. The second and third letters are identical. The initial success in those first discriminations, then, reinforces right habits—a left-right orientation as well as a reliance on letters.

When, through chance initial success, a child builds a reliance on extraneous and undependable cues, teacher and child face two problems, not one; first, the problem of breaking a bad habit and second, the problem of building a right habit to replace it. With sufficient control, however, it should be possible to build right habits from the very start to ensure more rapid progress and less frustration and reteaching.

Providing for individual differences

The third basic consideration was that of providing for a wide range of individual differences. The one generalization most frequently made from the extensive U. S. Department of Education first grade studies was that "there is no one method of teaching reading." An approach that is best for one student is apparently not always best for another. Some children are more eye-minded than ear-minded; children differ widely in background and interests. In short, individual differences do exist in great variety. How best can we provide for them?

In this series an eclectic fusing of five different facets was decided upon in an attempt to deal with such differences—the visual, the linguistic, the programed, the auditory, and the contextual.

Visual. Technological advances in overhead projectors, copy machines, and transparency materials have made possible for the first time a truly visual approach for teaching the visual act of reading. In this series at the first grade level the alphabet and Word- and Story-Introducers alone provide the teachers and beginning pupils with well over a thousand picture to facilitate the meaningful fusing of auditory and visual word symbols.

Linguistic. The word groupings used in this series are in line with the findings of linguistic science. The specific ordering of word groups was governed in part by previously mentioned considerations, in part by linguistic considerations designed to facilitate the child's attempt to connect spoken words with their corresponding written forms. When a picture is used to elicit the desired spoken word, the child is thus prepared for the next step —the fusing of oral and visual symbols. In this way the pictures serve to facilitate the connections to be made.

Some research by King and Siegmar (*2*) on different sensory clues as aids indicated that "when words were similar, a picture accompanying the printed words aided in learning it." Weintraub (*4*), in commenting on this research, writes, "their findings may have implications for those linguistic programs emphasizing similar spelling patterns. In such programs the words are similar, and illustrations of the words would serve perhaps as an aid in learning rather than as a distracting element."

Furthermore, the linguist's interest in structure, pattern, and intonation is reflected in the Visual-Linguistic series by suggested classroom activities relative to both Word- and Story-Introducers.

Programed. A programed format is used as part of this series, not to introduce words but to reinforce both form and meaning. This cuts down measurably on the number of frames needed and, hopefully, results in less possibility of fatigue and loss of interest.

After the stories in the reader are read, the child then turns to his programed text, in which all the words are used again at least once, both basic and growth words. This puts the words into a different framework and moves the children a step further into more independent effort, a move more easily made after the earlier attention to words as background.

Only in this part of the program are story-related pictures used with reading matter. Here the picture is neither directly above nor below the line of print related to it, a fact which minimizes undesirable up-down eye movements. Also, whenever possible, a story thread is used to heighten interest and ensure the growth of meaning. Some frames are, in addition, specially designed to facilitate improved word-attack habits, focusing attention on word beginnings or endings.

Auditory. Since it is through the listening channel that children acquire the vocabulary that they bring with them to the first grade, and since that channel is for them the most natural and effective, this series attempts to structure the early learning efforts in reading on a firm listening foundation.

Contextual. Context is the larger pattern which imposes meaning on words. Efforts are made to start the children to develop an awareness of its importance in the very early lessons. Contextual cues, when added to word and letter cues, ensure attention to all cues of prime importance in the reading situation.

As can be seen, these five strands taken together form a strong language-arts emphasis, with writing, speaking, and listening running parallel with the reading activities.

Enhancing teacher effectiveness

The fourth and most important consideration of all is that of enhancing the teacher's effectiveness. The two variables of chief concern in evaluating a reading program are the *teacher* and the *material.* Differing opinions exist, however, as to their relative importance. For example, Dr. Durrell, commenting on the U. S. Office of Education first grade reading studies, said, "It is evident from these studies that reading achievement is 4/5ths teacher and 1/5th material." At the other extreme is the position held by Dr. Montessori that "things are the best teachers."

This dichotomy between teacher and material is understandable. The conventional readers, workbooks, recordings, filmstrips, and movies are by and large in a format that imposes certain limits. Books are bound, the pages following a set order; the same words and pictures are always on the same page. Movies, filmstrips, and recordings also come in a fixed sequence and cannot be reordered by the teacher, even if she wishes to move one scene in a film to an earlier position to achieve a different educational objective.

Every teacher worthy of the name has certainly chafed under such limitations in her attempts to fit material more closely to the immediate classroom situation or individual problems at hand. All too often with this kind of material, the teacher must ask how she can best fit her pupils to the material. But ideally, materials should be fitted to pupils, not pupils to the materials.

This series attempts to bring teacher and materials into a new and closer working relationship. Just as a car is subject to the driver's will, so teaching materials should, insofar as possible, be subject to the teacher's own personality and philosophy and should permit a closer fitting to the immediate classroom needs and problems.

Obviously, this means a real departure from conventional format—from set pages, set sequences, and set patterns. Two new kinds of material were developed toward this end—Word-Introducers and Story-Introducers. They come in packet form for use in making transparencies for the overhead projector.

Typically, the Word-Introducers contain four words and four related pictures on a page. When a transparency is made and cut into eight parts, the teacher is then free to use any or all parts in any order, in any way, and in any combination to fit immediate class needs. She may impose whatever order she wants instead of being bound by someone else's ordering.

To fuse the known oral symbol evoked by a picture with the corresponding visual symbol to be learned is a real advantage. The teacher can go from the picture cue to the written word, then add oral reinforcing. She can go from the written word to the picture or to the spoken word. She can put several letters on the projector stand and ask a child to come up and arrange them below the picture to form the identifying word, while the others print the word at their seats.

She can use the Word-Introducers within a broad language-arts framework to teach writing, spelling, listening, reading, and speaking. She can tell stories woven around the words and have the children do the same. In short, here are materials which the teacher can actively shape and mold to fit the particular needs of any group or class.

One teacher whose pupils had had trouble with a standardized test used the Word-Introducers to develop needed insights into the multiple-choice test pattern. She placed a word on the left side of the projector platform and four pictures on the right, one of which matched the word. Another day she changed the format slightly, putting a picture on the left side and four words on the right, one to match the picture. In another variation she asked the children to copy down the one word that fitted the picture. In this way, as with a game, the children began to think in terms of common test items.

Story-Introducers also lend themselves to the personality and impressions of the teacher. While they are expressly designed to whet interest in the stories in the reader, they can also be used for word reviews of various kinds, for class discussion, or for story telling either by teacher or children. The list of words can be masked and the children can be asked to write down as many words as are suggested by things in the picture—to see who can make the longest list. The teacher can copy a child's list on the copy machine and have the rest of the class read it. Words from the Word-Introducers can also be used with the Story-Introducers.

Even the conventional materials in the series—the readers and workbooks—are so designed that transparencies suitable for class projection can be made from most of the pages, and used, if desired, separately or in combination with other material.

Vocabulary limitations in any first grade reading series pose problems. The first stories are, of necessity, stories in name only because of the tremendous gap at that point between the child's reading and speaking vocabulary. Here, through the use of the Word- and Story-Introducers and appropriate questions over the stories, the teacher can help the children read between the lines and retell the stories in an expanded and more natural form, using complete sentences and breaking away from the limitations of their reading vocabulary.

After the initial preparation, savings in preparation time are a real help to the teacher. To put a large amount of material on the board takes time. If that same material is put on transparencies, it can be used again and again, year after year, without further time investment on the teacher's part.

Another advantage is the control of attention. When the chalkboard is filled before the children come in, the teacher is not able to control the attention to the degree desired. The children see the material at once and in entirety. On the other hand, with transparencies the teacher can control attention exactly, even to the extent of masking all but the portion—word, phrase, or picture—that she wants to talk about.

In addition, the teacher can keep good eye contact with the class. Eye contact is lost when she turns to write on the board. This is the moment when the distracting action of a few children can have such a disrupting effect on general class attention. If the teacher is facing the class, as when using the projector, she is constantly in control of the situation. Furthermore, she is using a more legible combination; research indicates that black letters on a white background are "14.7 percent more legible" (3) than white letters on a black background.

The characters are drawn so as to provide maximum help for the teacher. For example, to personalize the teaching of the alphabet, the teacher has little Alphy in hand-puppet form, eager to tell the class all about the letters he has in his bulging bag. To motivate the first reading experiences the teacher also has Alphy's help, his cat and word kit taking the center of the stage. This means that when the teacher is ready to introduce the first programed text, Alphy is there to lend his helping hand. He shows the children exactly how to use his Show-and-Tell Tab to keep the answers properly covered.

Canny Cat provides the teacher with material designed to encourage discussion of character traits and behavior. To make the children more aware of the need to listen and build better listening habits, the teacher has Babby Big-Ear; her ear grows bigger whenever she fails to listen. Finally, Bob's Wish Cap helps the teacher lead easily and naturally into the area of critical reading and reading between the lines.

In short, the Visual-Linguistic Reading series is based on the assumption that the teacher is indeed the single and most important factor in an effective reading program. It follows that the best materials are those which best reflect the teacher's own philosophy, experience, and personality and best serve to heighten and enhance her key role in the classroom.

Years ago Aristotle said, "The fate of a nation rests on the education of its youth." With reading at the very heart of all our educational endeavors, we must leave no stone unturned in our search for the best possible approach to teaching it. This means a willingness to explore and capitalize on any and all technological advances that have strong potential for improving instruction. The overhead projector, copy machine, and transparencies seem particularly promising.

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Using Multimedia: A Systems Approach

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OVER THE YEARS teachers have made use of various materials for aiding learning, but modern technology has made it possible to introduce sophisticated equipment geared especially for developing perceptual factors in reading. In some cases visual aids have been introduced as part of a total planned reading program. In others they have been sold separately to be used at the discretion of the teacher. In most instances, however, audiovisual aids have been regarded and used as dispensable adjuncts to the instructional program rather than as integral parts of a systems approach to instruction. While the past ten years have produced rapid changes in the types of visual aids available to teachers, it is safe to predict that the next ten years will bring about even more dramatic changes as we develop appropriate uses for computers and other electronic devices.

Genesis of the Listen-Look-Learn program

Several years ago, representatives of the Educational Developmental Laboratories, which specialize in development and production of reading materials, programs, and instruments, met with representatives of Singer/Random House, a publishing firm known for producing books of high literary quality. They discussed how they could combine their resources to produce a total program for reading. Their thinking was based on an interest in developing individualized approaches to beginning reading while at the same time providing for a sequential development of skills and introduction of vocabulary.

They proceeded with a plan for a systems approach to reading instruction which would provide books, or stories, emphasizing literary quality from the beginning stages of reading. Using these books as a focal point for the development of critical reading skills, multimedia material—much of it auto-instructional—would proceed with introducing, evaluating, and reinforcing vocabulary and word-attack skills.

This multimedia program, together with teacher directed experiences, would combine the sequential development of vocabulary and skills typical of a basal approach with the expansiveness and enrichment characteristic of individualized reading techniques.

Thus, these two companies joined forces to develop a broadly based reading program which would better meet the needs of most children and help an increasing number to find success and pleasure in reading. The Listen-Look-Learn program came into being. At the present time, material has been prepared—and used for two years in research installations—for primary children. Work is progressing on subsequent levels.

The rationale behind the development of the L.L.L. program (as it will be called henceforth) has been one of supplying children with balanced reading materials emphasizing literary quality, beginning with the initial reading experience itself; using this body of literature as the source of vocabulary and skills; and providing children with a learning system which introduces, instructs, reinforces, evaluates, and reviews program content.

Important aspects of the L.L.L. program

The total instructional process of the L.L.L. program is implemented through a system of interlocking, interdependent elements, each related to the effective functioning of other parts of the program. Following the readiness, or prereading, period, the program is prepared in cycles of instruction which provide for initial teaching, application, reinforcement, and extension of perceptual abilities; for vocabulary, skills, and concepts. Each part of the system forms an integral part of these cycles with key features described as follows:

Multimedia. The program makes wide use of multimedia, including instruments, pictures, records, filmstrips, puzzles, manipulative materials, and a wide range of reading materials to develop concepts and ideas in concrete understandable form and to encourage the use of precise and meaningful language.

Multimodal materials. Since individuals develop preferred learning styles, or modes, through which they attempt to extend their knowledge and competency, the multimedia approach used in the L.L.L. program guides each child and enables him to use the learning modality most suitable for his own learning and to develop competency in the use of other learning modalities.

Multilevel system. L.L.L. seeks to provide for the continuous progress of all pupils through a learning system that is multilevel and nongraded. Instruction is organized around mastery of successive levels of interrelated content. In order to provide for the continued progress of the most able student, the program offers a wider range of reading content and instruction than is normally offered during the first year. Not all students are expected to complete this instructional sequence, but each will progress to the highest level of which he is capable. In other words, student progress is related to achievement and mastery of content, not to grade placement.

Self-pacing. Children are encouraged to progress at the rate which proves appropriate for each individual both within the cycles and in moving from cycle to cycle. While children can work in groups, and often do so in order to facilitate instruction, they can move from group to group or work individually as the situation warrants.

Auto-instructional techniques. The use of auto-instructional techniques increases in two ways the learning time made available to each child during the instructional part of a day. First, it is possible to form many more instructional groups at one time, since children can work by themselves as a group, or with the teacher. Carefully programed materials present words and skills to the children and require use of the word or skill in completion of an exercise. Correction frames provide immediate feedback as to the accuracy of a response. Thus, several groups may receive instruction simultaneously. Second, it is possible to increase the number of times each child has an opportunity to respond to questions and exercises. Because each question is addressed to the individual, no one must wait for a turn. Each child interacts directly with the material, answering each question, completing each exercise, and evaluating his progress by comparing his answer with that appearing in the frame.

The use of auto-instructional techniques also facilitates greater individualization and personalization of instruction. By making possible the formation of an expanded number of groups, instruction can be adjusted to fit the achievement level of each pupil. Teachers can devote more time and attention to each child and, as a result, can devise extension and enrichment activities tailored to the needs and interests of individuals.

Continuous evaluation. A process of continuous evaluation is built into the L.L.L. program. The pattern of teaching is one of introduction, instruction, reinforcement, review, and finally further extension or enrichment as seems advisable. At each level of teaching, however, evaluation takes place. This means that children who are able to move ahead because they already understand the skill being taught can do so if it is appropriate. They can make use of enrichment provisions in the program or go on to the next level of work. On the other hand, evaluation might indicate that further instruction or reinforcement is required, which would mean that a child would be provided with further experiences to help him understand a skill, and it might mean prolonged use of extension activities.

In applying continuous evaluation to the L.L.L. program, each auto-instructional skill lesson ends with an independent activity which serves as a diagnostic tool to identify 1) the children who have mastered the skills and can proceed to the next level of instruction within the cycle and 2) the children who need further instruction and reinforcement of concepts and skills presented in the lesson. Following the initial presentation of a word or skill, further reinforcement is ensured through a variety of auto-instructional and teacher directed activities in the nature of extension or enrichment.

During Part IV of the cycles, which provides for individualized reading and related language-arts activities, children learn the art of self-evaluation working with specifically prepared materials with the teacher. The following materials are especially significant in this regard: 1) There is a reading record folder for each child. In this folder, the teacher records information pertinent to the progress of each child, and this is shared only between the teacher and the child. 2) Important to the evaluation of comprehension is the use of what, how, and why questions provided in the guide, with the stories themselves or on specially prepared question cards. 3) Children are also provided with skills sheets, which come in two types. Evaluation sheets test the ability of each child to apply word analysis and comprehension skills and concepts. Reinforcement sheets are provided for those children who demonstrate the need for further reinforcement in using any skill tested. Directions accompanying the sheets provide suggestions for further extension or enrichment activities.

Motivating children

Encouraging children to set their own goals for learning is an important part of the L.L.L. program. As children participate in the various learning experiences, there develops a pattern of behavior which enables them to anticipate and plan. Each child moves into learning situations which are carefully programed and sequentially presented, and through his own efforts the child is able to acquire competency in reading skills. At the same time, children are encouraged to engage in creative efforts, and materials included in the program are organized and written to allow for each child to branch out by working on projects in terms of his own creative talent.

Learning to learn. A most important contribution of this program is the emphasis on sharpening perceptual abilities in listening, speaking, and reading. The art of self-evaluation is developed. Critical judgment and creative thinking are constantly emphasized throughout the program activities. Freedom to assume responsibility for learning by setting personal goals, to progress at the rate that is best for each individual child, and to evaluate one's own progress are procedures compatible with what we believe will bring out the best of learning in children.

Cycles of instruction

To implement the continuous progress of pupils, the content of the L.L.L. program is organized into cycles of sequential instruction, forty of which are contained in the initial part of the program now developed. Each cycle of instruction is divided into four types of activity essential to successful reading.

Part One provides training to develop and maintain perceptual accuracy and visual efficiency using both the Tach-X and Controlled Reader. Using the Look and Write eye-hand coordination book and accompanying filmstrips in conjunction with the Tach-X develops an adequate sense of spatial relationships as this factor relates to reading and writing. Accuracy training filmstrips, used with the Tach-X, develop visual discrimination and visual memory. Motility training filmstrips used with the Controlled Reader develop the oculomotor facility needed for efficient silent reading.

Part Two is devoted to building a background of experience that enables a child to approach subsequent instruction with greater understanding.

Part Three provides a subsystem of auto-instructional skill-building activities which introduce, reinforce, evaluate, and extend words and skills. This subsystem makes use of the Aud-X, the Tach-X, and the Controlled Reader.

The Aud-X is used in two ways. First, it introduces the child to new sight words and to the skills necessary for observing and hearing the distinctive graphic and auditory characteristics of these words. Second, it introduces graphic forms of words in the meaningful aural context of a story, and at the same time develops listening comprehension skills while providing information and building concepts.

Children are able to operate and use the Aud-X by themselves, inserting a record and filmstrip in the instrument. A special button enables them to start the instrument as needed, either to start the operation initially or to restart it after completion of an exercise programed into the material.

The Tach-X is also used in two ways: 1) it is used to decrease the time it takes the child to recognize words which were previously introduced on the Aud-X by projecting them on a screen at speeds from 1/10 to 1/100 of a second. As the child watches each word flashed at this rate go out of focus, he uses his visual image of the word to select and mark the word in his Tach-X book, then checks his work as the word reappears in focus on the screen. 2) It is also used for developing sensitivity to the effect of context on the meaning, function, and form of a word, included as part of the above activity, through seeing the words used in specific context.

The Controlled Reader also serves two functions. First, there are processing training filmstrips designed to assist the child in moving beyond preoccupation with the recognition of individual words to the development of ability to blend individual words into units of meaning. This is accomplished by removing the necessity for eye movement, flashing short story segments, one word at a time, on the same spot on a screen. The pupil transforms the continuous flow of individual words into a stream of ideas as he perceives and processes word meanings. The teacher then tests pupil comprehension of ideas through questioning after each filmstrip segment has been shown. Second, the Controlled Reader uses filmstrip stories to develop fluency, fusing into a single sustained act of silent reading all of the visual-functional, perceptual, and associative skills acquired in other skill-building activities. This is accomplished as filmstrip frames—averaging four words per line—project a moving slot traveling across the screen, covering and uncovering a story at rates, and in a manner, that will ensure the development of efficiency and effectiveness in reading. Following the reading of the selection, children are again called upon to answer questions, thus indicating their comprehension of story content. It should be noted that the goal set for this activity in reading is to return children, while reading silently, to the usual listening and speaking rate of 150 words per minute while maintaining at least 70 percent comprehension as indicated by the results of the test given after each experience.

Part four follows, providing for individualized reading and related language-arts experiences. A variety of materials has been provided for the implementation of this part of the cycles.

There are thirty-eight Reading Sheets developed to provide additional reading material during cycles 1 through 11.

Eighteen samplers, each of which is a story in itself, are used with cycles 3 through 20. Since the sight vocabulary has been introduced in the auto-instructional part of the program, it is possible for children to read these samplers with a minimum of effort, enabling the children and teacher to focus upon appreciation and comprehension.

Two prose and poetry anthologies follow the samplers. Together they form the nucleus for teacher guided reading. It is from these books that the vocabulary and skills presented in auto-instructional skill building activities are drawn.

Finally, there is the Carousel Library, consisting of thirty books written especially for the L.L.L. program. There is a Teacher's Guide which provides a synopsis of the content of each Carousel book and there are the What, How, Why question cards, mentioned earlier, to accompany these books.

Each part of an instructional cycle is closely related to the other parts. That is, the parts are interdependent and build upon, reinforce, and extend that which has gone before. In turn, each successive cycle of instruction builds upon, reinforces, and extends the content of previous cycles.

LISTEN LOOK LEARN LITERATURE BOOKS FOR INDEPENDENT READING

Carousel Books

Group A	*Group B*
Missy and the Mountain Lion	The Carousel Book of Folk Songs
A Sunday in Autumn	The Carousel Holiday Book
Tool Chest	Good-bye, Hello
Street Dog	I Am Jungle Soup
Hiccup Hippo	Peas and Honey
Helicopter Can Be	The Sand Poems
My Street	Dandelions are Growing
Kinji Goes Fishing	Old McDonald
My Daddy Lost His Job	What Is a Truck?
Hector, the Dog Who Loved Fleas	Too Many Live in My House

Group C

This Away Go I
Rhinoceros Who Loved Trees
That's What
Noah, Noah
What Is an Airplane?
The Turtle and the Rabbit
Hermit Crab
Harbor Tug
Picture Dictionary
Hatbox

Listen Look Learn Literature Books for Guided Reading

Sampler Booklets

- One, Two
- Walrus Says
- Sid the Skunk
- The Big Hunt
- Ben and the Bee
- Two Cats
- Pirate Tig
- Christmas at the Zoo
- Six Silly Animals
- One Fine Day
- Tad and Willy
- The Missing Fish
- Sam and Me
- Little Pictures
- Circles, Squares, and Colors
- The Rooster, the Mouse, and the Little Red Hen
- The Bremen Town Musicians
- What Is a Lion?

Prose and Poetry Anthologies

- Tree Tops
- Snow Drifts

Literature. The literature selections of the L.L.L. program encompass five major areas of children's reading interests: 1) fantasy, 2) fact, 3) adventure, 4) mystery, and 5) true-life stories. These selections feature themes that appeal to different ethnic and economic groups and settings that will be familiar to urban, suburban, and rural children. Each selection utilizes one of three basic styles of writing—descriptive, narrative, or expository. To qualify for consideration all reading selections had to meet three basic criteria. Each selection had to provide for child involvement, deal with the world of the child as he sees it, and contribute to the development of one or more of a carefully conceived set of esthetic, ethnic, ethical, and social values.

Vocabulary. By the time a child has completed the skill-building activities of the first three parts of a cycle, he has acquired the vocabulary necessary for independent reading. His initial encounter with the book, or story, developed in part four can thus be successful and pleasurable, reducing the need for the word-by-word reading which slows the process of reading and dulls the interest and comprehension.

With the carefully programed introduction of words and skills made possible by auto-instruction, more words can be introduced. The L.L.L. program introduces and maintains 779 sight words. Children are taught to unlock words by applying word analysis skills presented with the program. Thus, 300 additional words can be unlocked by the pupil as he applies the word analysis skills. These additional words are found in the independent reading of the Carousel books. Thus, the total reading vocabulary of pupils completing the first 40 cycles will range from 1,100 to 1,250 words.

Skills. Word analysis skills (phonic and structural) needed for the independent reading of literary selections are sequentially developed in L.L.L. Auto-instructional techniques introduce and provide directed practice in application of each new skill. Dignostic aids are provided in each cycle to assess the mastery attained in the use of each new skill. Materials for the reinforcement and reteaching of each skill are available for use within each cycle as needed. Literature selections provide situations in which previously and newly acquired skills are applied in fresh context.

Word perception is the synthesis of recognition and understanding of a word. Thus, the word must be within the listening and speaking vocabulary of the reader. Emphasis is continually placed upon 1) providing understanding of word meanings through looking and listening and through discussion and on 2) the reading of material that is specifically tailored to make use of context clues as valuable aids to word perception.

Comprehension includes literal understanding, interpretation, and the synthesis of literal understanding and interpretation. Throughout the L.L.L. program every effort is made to help the young listener and reader adopt an inquiring attitude and focus his attention on obtaining meaning from what he hears, sees, and reads. The What, How, and Why questions mentioned earlier guide children along these lines. In answering a question beginning with "What," the child is called upon to think of a literal response, frequently rereading to verify specific details or information. In responding to a "How" question, the child relies upon literal meanings, but he also makes use of his own ability to interpret information from what he has read. For a "Why" question, however, the child must call upon his ability to use interpretive skill, to communicate with his own previous experiences, and to read between the lines.

Critical reading involves evaluation of material read. The necessary abilities are developed in the early years and, according to the most recent research, are not usually altered too much in later years. In the L.L.L. program readers are encouraged always to use a questioning attitude in reacting to what is read or heard, to judge truth, accuracy, worth, literary merit, and to apply sound standards in forming judgments.

Creative reading comes about as the child fuses ideas found in reading with his previous experiences. As he does so, he develops new understanding, reorders old patterns, and develops new ideas. He then takes what he has read or heard and contributes plausible meaningful, and frequently unique additions. This program places emphasis upon achieving such goals as a result of reading. In the suggested activities and in the reading material itself creative thinking is stressed.

The anticipated product of L.L.L. is the critical/creative reader, one who is able to receive specific instructions in reading skills such as understanding humor, making logical inferences, visualizing, making judgments, drawing conclusions, etc., and who is able to react critically and at the same time take unto himself that which is new and to add to it.

From this description it is apparent that the L.L.L. program provides instruction in the major aspects of reading: word perception, comprehension, reactions to what is read, and fusion of new ideas with old (*1*).

Materials included in the L.L.L. program

After having developed a background of information relative to the philosophy and organization of the L.L.L. program, let us turn to specific materials.

The Readiness Stages

There are twenty stages included in the program intended to prepare children for formal reading and to assess their readiness for it. Enough activities are suggested and materials provided for a more protracted length of time, however, if evaluation proves that more time is needed.

Readiness Materials	*Goals for Learning*
Tach-X ABC Filmstrips	Making accurate visual observations, utilizing memory, proofreading own writing
Look and Write Book to accompany ABC Filmstrips	Identifying placement of symbol elements, discriminating spatial relationships, discriminating between symbol elements
Readiness Worksheets	Associating pictures, sounds and letters, solving puzzles, associating capital and lower case forms of letters
Picture Sequence Cards	Using background experiences to aid in interpreting meaning of pictures, telling stories, arranging events and situations in logical sequence, anticipating conclusions, drawing conclusions, making inferences, communicating ideas orally
HEAR	Discriminating initial and final sounds using pictured words
Weston Woods Sound Filmstrips	Listening to stories, demonstrating ability to interpret them in critical/creative manner, to make literal interpretations and inferences
Readiness Filmstrips	Noting directional movement, size and shape, initial and final word sounds, rhyming words, like and different word sounds, classifying and identifying, comparing and contrasting objects
Aud-X Readiness Filmstrips and Records	Focusing on a task and sustaining attention, interpreting and following oral directions, using background experiences to understand words and to communicate through a response
Teacher's Guide	Suggested experiences for using the materials and other language-arts activities over a 20-stage period, referring to the Resource Materials Section for many activities suggested

Many of the above-mentioned materials are used again in the cycles which follow the readiness period, becoming a part of suggested activities geared to that part of the program.

Cycles 1-40

Materials	*Goals for Learning*
Aud-X Story Lessons (Record, Filmstrip, Book)	Looks and listens attentively to story, learning to recognize new sight words presented, applying comprehension skills in terms of story, completing exercises with near perfect accuracy.

Aud-X Words Lessons (Records, Filmstrips, Book)	Looks and listens attentively, understanding the phonic or structural analysis principle presented, completing directed and independent exercises with near perfect accuracy
Tach-X Filmstrips and Book	Utilizing visual memory, associating printed symbols with spoken words, using vocabulary appropriately in context
Controlled Reader Processing Training Filmstrips	Going beyond word-by-word identification to the processing of ideas at rates of up to 600 words per minute
Controlled Reader Fluency Training Filmstrips and Book	Extending habits of left-to-right directional attack, reading silently at the usual listening rate, developing fluency in silent reading, applying comprehension skills
Flash-X, Word Discs	Reinforcing sight vocabulary introduced in each cycle at exposures of 1/25 of a second
Flash-X, Word Study Discs	Applying word study skills presented in each cycle, extending ability to attack words independently at an exposure rate of 1/25 of a second
Samplers, Anthologies	Using vocabulary in fresh context, reading in a guided situation with fluency and good comprehension
Carousel Library	Reading independently with fluency and comprehension extending ability to read new vocabulary
Carousel Library Question Cards	Responding to what, how, why questions in a manner which reflects ability to give literal interpretations and to make inferences, extending vocabulary meanings pertinent to a book
My Word Book	Applying dictionary skills to sight vocabulary, building own stock of words, using words for creative writing and spelling
Skills Sheets	
E Sheets	Evaluating ability of each child to perform in terms of skills evaluated at a given time
R Sheets	Reinforcing skills which have been evaluated at a given time by E Sheet
Hear & Read	Translating initial and final sounds of spoken (picture) words to familiar printed word elements
Reading Record Folder	Using teacher-pupil relationship to provide a record of each child's progress

My Own Reading Record	Keeping an individual record of books read by each child with appropriate reactions by the teacher
Words to Know Bookmark	Recording difficult words encountered in reading reviewing the word and skills needed to establish quick recognition
Word Cards	Using sight words individually or in groups, gaining in quick recognition of the words, applying word attack skills
The Teacher's Guide, three volumes:	
Overview	Describing the framework and operational requirements of the L.L.L. program
Cycle Lesson Plans	Including detailed teaching plans for the Readiness Stages and the first 40 cycles
Resource Materials	Containing suggested word perception, comprehension and related language-arts activities to use in extending the work presented in Part IV of the Lesson Plans

Conclusion, a progress report

At the present time the Listen-Look-Learn program includes material through the first forty cycles. It has not been for sale up to this time since it is being used in twenty-two research installations throughout the United States. On the basis of results obtained from these installations, revisions have been made in certain portions of the program so that it is now ready to be placed on the market.

The next portion of the program, consisting of an additional forty cycles is now in the initial stages of preparation, and it is anticipated that children who participate in the program in the first grade during the coming year will be able to move into second grade with the additional materials available to them.

This program represents a major attempt to incorporate tested materials into a broad program for learning to read, providing for instruction on a sequential, carefully planned and executed basis, while at the same time providing for individual differences in learners. As such it represents a major attempt to implement recent reading research findings and to take advantage of the advanced technology of today's multimedia oriented education.

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Reactions to
Using Multimedia Techniques in Beginning Reading

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Research evidence establishes the fact that the teacher is the most significant variable in the education process. In assessing approaches to beginning reading in general and multimedia approaches in particular, it appears there are three additional focal points of concern: the learner, the process, and the tools of the teacher in the instructional program. These concerns may be expressed in three questions: 1) Does the approach lend itself to adaptation to the individual who is the learner? 2) Is the approach based on a comprehensive understanding of the reading process? 3) Does the instructional program provide the teacher with the tools to bring the learner and the process together in a way which is meaningful to the learner?

The learner. In this era of mass media and mass culture, it is gratifying to note that the focus of the thinking educator centers on the individual. Durrell (3) identifies the following services as hallmarks of a program which attempts to meet the needs of the individual learner:

1. Adapting instruction to various levels of ability
2. Providing for different progress rates in reading
3. Providing special help at points of weakness in learning development
4. Encouraging individual and group self-direction and initiative
5. Enriching learning, to make it significant and useful

For the purposes of these particular programs, I should like to add two more services:

6. Providing for different styles of learning
7. Utilizing the background experiences the child brings to school to facilitate learning and make it personally vital

To be sure, no technique or program can make these provisions, for this is the function of the teacher. Certain characteristics of techniques in programs can, however, facilitate the task and increase teacher effectiveness.

The Visual-Linguistic series, through a variety of materials designed for flexible use and a series of reading and listening tests, provides opportunities for the teacher to make adjustments to rate and level. It is in the matter of provision for various styles of learning that this program has potential. The "eclectic fusing" of the visual, auditory, linguistic, contextual, and programed facets represents an important development in programs for beginning reading instruction.

It is hoped that the teacher will attempt to study the learning style of the individual child and select the combination of modes most appropriate to him. The materials have the potential for diversified use, but it is the teacher who must make the choices.

While the diagnostic teaching of subskills is made possible through the careful structuring of these skills, it is in providing for self-directed and social learning that this program is noteworthy. The programed format and the variety of grouping procedures allow the child opportunities for independent, small-group, and total-class experiences. Minimizing initial difficulty in learning to read is a necessary goal, but mastery of each phase of the program will create the true feeling of success.

Lastly, the type and extent of the vocabulary introduced in the first year allows the learner opportunity to read books of his own choosing. Mastery of basic word-attack skills within the medium of traditional orthography precludes adherence to one type of material, but rather permits the reader to enjoy all types of beginner books. It is necessary, however, for the teacher to provide the opportunity and create the atmosphere in which reading for pleasure flourishes.

The Listen-Look-Learn program focuses upon the development of cycles of learning with mastery of successive levels replacing the traditional graded programs. Each child progresses at his own rate and completes the highest level he can achieve. Thus, provision for rate and level are implicit in the basic design of the program. The multimodal approach permits the teacher to select the learning modality best suited to the child's personal style. Thus, the perceptive teacher has the material possibilities for adapting to rate, level, and style of learning.

Diagnosis is a cooperative process. Upon completion of each level, the teacher administers a diagnostic test to evaluate the child's ability to progress to the next level. Throughout the program the reader learns the highly useful skill of self-evaluation.

The value of this ability cannot be underestimated, since independent learning is largely dependent upon the ability to evaluate one's strengths and weaknesses.

In the Listen-Look-Learn program a variety of grouping patterns is possible, and there is clear recommendation for flexibility in grouping practices. The dubious practice of take-your-turn reciting is replaced by individual interaction with the material, and the objective of "learning to learn" is stressed.

In selecting content, material of a literary quality was chosen, since it would lend itself to creative and critical thinking, but thinking must be encouraged by significant probing and opportunities for interchange of ideas. This is made possible only through communication between child and teacher, child and child.

In reviewing these services to the learner, it is important to repeat that the opportunities for service vary with the programs. Ultimately, however, it is the teacher who is responsible for the quality of instruction. The depth of her perception of the learner is the significant factor.

The process. Basically, reading is a process of communication through the medium of language. As such it is an active process, for communication implies interaction. The successful reader is, in essence, engaged in a dialogue with the writer.

Bruner (*1*) has classified language as one of the most significan contributors to man's humanization. Of all creatures, only the human has the gift of language and its importance cannot be underestimated. My concern is that the child learn not only the skills of reading but gain an understanding of the nature of the process. Concentration on form to the exclusion of essence is superficial learning at best.

The research in reading attests to our success in teaching persons how to read, but the studies of reading habits do not proclaim the same success. Achievement test results create a positive picture, but even a cursory glance at the daily newspaper indicates the limited degree to which language is being used as a humanizing force.

In both programs discussed there is emphasis on the total language approach with opportunities for experiences in reading, listening, writing, and speaking; but the opportunities for these experiences do not in and of themselves guarantee an understanding of the basic nature of reading and the related processes. The teacher's own understanding and her attitude toward the total area of language will create a rich or empty climate for learning. Teaching requires communication, and the first dialogue must be between the teacher and the learner. The degree to which this communication is successful will have significant effect on the teaching-learning process. The degree to which the teacher understands the nature of reading will have a significant effect on her teaching and on the child's abilities and attitudes.

The instructional program. Eleanor Johnson (4) has set forth a thoughtful set of criteria for evaluating instructional programs. Again, it may be useful to state these guidelines and apply them to the programs under consideration. They are:

1. Desirable continuities in sequence of learning, in concept development, and in thought processes
2. Varied approaches to learning stressing cues, participation and reinforcement; multimedia approaches and creative development
3. Diagnosis and self-evaluation
4. Teacher Guide

In the Visual-Linguistic series there is an attempt to actualize the scholarship of the linguists in the matters of structure, pattern, and intonation. Reading evolves through a carefully controlled set of learning experiences planned to minimize difficulties and assure mastery. The reader learns that words have form and meaning, that decoding is accomplished in left to right progression, and that reading is a form of communication. The nature of the program and its approaches creates a framework in which the teacher may build significant experiences in language in general and in reading in particular. There is opportunity for mastery of the process and its subskills, but the teacher must make the most of the opportunities. The use of a variety of approaches is obvious, and the programed format provides for self-evaluation and employs cues, participation, and reinforcement. Since one of the basic commitments of the program is to increased teacher effectiveness, there are real attempts to provide more descriptive than prescriptive form, and the teacher is free to choose from the multitude of ideas and possibilities those experiences which are most appropriate for the learner.

By definition, the Listen-Look-Learn program is designed around cycles of learning which provide for initial teaching, application, reinforcement, and extension of perceptual abilities, vocabulary, skills, and concepts.

Strong literary emphasis is featured to develop critical and creative readers and encourage interaction with the printed page. The diagnostic procedures lend themselves to further interaction as the child participates in the work of his personal evaluation. Multimodal systems provide variety of approach and permit development of concepts through concrete experiences.

The three-volume Teacher's Guide includes *Overview*, *Cycle Lesson Plans*, and *Resource Materials*. Contained therein are a multiplicity of aids, suggestions, idea possibilities, and resources; but in this program, as in all programs, it is the teacher who must make wise choices. What to use? How? For Whom? And most important, Why?

It is inevitable that a discussion of the use of media include a reference to the scholar who has come to be its oracle. In a recent article (*2*) entitled "A Schoolman's Guide to Marshall McLuhan," John M. Culkin, S.J., states:

> Learning is something that people do for themselves. People, places and things can facilitate or impede learning; they can't make it happen without some cooperation from the learner. The learner these days comes to school with a vast reservoir of vicarious experiences and loosely related facts; he wants to use all his senses in his learning as an active agent in the process of discovery; he knows that all the answers aren't in. The new learner is the result of the new media, says McLuhan, and a new learner calls for a new kind of learning.

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It has long been my feeling that in the teaching of reading, as in the teaching of most of the traditional skills and areas of content, we have been tardy in utilizing a multisensory approach. I use the term "multisensory" because to me it is much broader and more comprehensive than "visual-linguistic" or "multimedia."

My reaction to papers such as the preceding ones is probably influenced somewhat by two strongly-held beliefs, neither of which is original with me, but which are, I think, amply supported by research.

The first of these beliefs is based upon observations made by McLuhan (*2*) in the 1964 Yearbook of ASCD, *Nurturing Individual Potential:* "A basic evidence of individual differences is the manner in which each individual takes in sensory data. All too often . . . we assume that each child receives sensory data in the same manner. . . . For one pupil, kinesthetic experience must be utilized to reinforce what the eye sees and the ear hears. For another (and note this) the inability to shift from one sense mode to another creates problems in reading." He concludes, "The teacher must provide opportunities for an encouragement of fuller utilization of *all the senses* whether in kindergarten or the twelfth grade." And remember, this is true whether children be bright or slow.

My second strongly-held conviction is that children (and adults) learn different things in different ways at different levels of maturation. Some things are best learned by a do-it-yourself method—it's about the only way to learn motor skills. On the other hand, as Bruner (*1*) has pointed out, much learning involves symbolic manipulation, mental imagery, and most important, perhaps, that learning which comes by intuition. And each plays a different role with different individuals as youngsters mature and as life patterns change.

I mention these two convictions—or biases, if you prefer—because they represent some assumptions upon which my comments are based.

May I comment, first, with reference to the programs discussed in both the papers, that neither introduces the use of new media nor does either suggest unique uses for the familiar media. The uniqueness lies rather in the "systems approach" developed in an attempt to capitalize on the old or slightly modified or adapted media. Both programs would seem to me to be based on a Skinnerian approach. Neither, I think, takes advantage of the child's own experiential background. My own observation, supported by several recent studies, has been that the language-experience approach is a most fruitful one. I would say this shortcoming was especially evident in the program discussed by Professor Brown. You will recall that in the first book in the series all but four words out of sixty contain the "short *a*" sound. I am wondering how stimulating and meaningful in terms of an *individual's experience* such a vocabulary can be.

It reminds me of my own experience in learning to read with a Beacon Chart. We had exciting times with *rat, hat, cat, sat,* and *tat*! I would also raise a question concerning the method of selecting the "irregular sight words." They were selected, I believe, after "research *(sic)* involving an analysis of 42 preprimers and 28 primers, the vocabulary of seven primary reading series, and words of high frequency from four other sources." Then comment was made that "this ensured as close a relationship as possible to other first grade materials. . . ." My question regarding both statements is, *Why*? Have we gone back to the time when we had "first-grade vocabularies" and "second-grade vocabularies, etc."? Have we regressed to the point where the main objective in any given class is to prepare the youngsters to sit in someone else's class? I would further comment that if the vocabulary is largely determined by what words are used in other primers, the content will generally not be appropriate to the disadvantaged and the culturally deprived, about whom we are all presently so much concerned. My question would be: How does a teacher adapt this material to the nine-year-old with a limited experiential background, reading at preprimer level?

I have two other questions with reference to Dr. Brown's paper. The author referred to the "controlled word grouping" and commented that this "forces more attention on letters, a step in building desired habits." I am sure he did not mean that attention to individual letters is a desired "reading habit" and I would appreciate his comments on this point.

Another question: references were made to the "programed text in which all the words are used again. . . ." How does the programed text differ from the traditional "workbook" which has caused all of us so much concern down through the years? I would also ask Dr. Reynolds this same question with reference to the auto-instructional materials employed in the L.L.L. program. Other than that the material is automated—you don't have to turn pages—how is it different?

But let me say that I am impressed that in the program Dr. Reynolds described evaluation is a continuous process. If the child has mastered a skill, he can move ahead. I like the emphasis on self-evaluation and on critical judgment and creative thinking. Frankly, I am much more concerned about these than I am about graphemes and phonemes. Beginning reading to me is so much more than "a decoding process by which appropriate verbal responses are transferred to printed material." I regard reading as a process of getting meaning from a printed page and applying it.

Perhaps, because this is my definition of reading, I feel that in the evaluation of any of the current crop of reading innovations, we are at a distinct disadvantage. We do not have, and have not had, time to develop the longitudinal studies which are needed. I want to know not only how well a child can read at the end of first grade or second grade or third grade—I also want to know how he *feels* about reading when he's ten or twelve or fourteen. Is reading the joy it ought to be? Does the child love words and the manipulation of words? Or does he "read" the picture magazines? Is his reading skill a useful tool in helping him better understand his environment and his relation to it, or is reading a tedious task undertaken only as a last resort? I think these are the kinds of questions to which we must find answers as we examine critically any "reading system."

Let me say again that I enjoyed the papers. Each paper and the program it described indicates another step forward as we seek to find eventually the means of helping every child develop what, in spite of all our advances in instructional technology, is still the basic learning skill.

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